The University of Chicago

APR 6 1917

Some Views of the Time Problem

A DISSERTATION
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL OF ARTS AND LITERATURE
DEPARTMENT OF PHILOSOPHY

BY

BENJAMIN W. VAN RIPER

STANFORD UNIVERSITY LIBRARIES
WITHDRAWN

MENASHA, WISCONSIN
The Collegiate Press
GEORGE BANTA PUBLISHING COMPANY
1916

3781
C53V
UNCLASSED

The University of Chicago

Some Views of the Time Problem

A DISSERTATION
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL OF ARTS AND LITERATURE
DEPARTMENT OF PHILOSOPHY

BY

BENJAMIN W. VAN RIPER

MENASHA, WISCONSIN
The Collegiate Press
GEORGE BANTA PUBLISHING COMPANY
1916

Digitized by the Internet Archive
in 2025

https://archive.org/details/someviewsoftimep0000benj

CONTENTS

PART I

THE GENERAL ISSUE

I. INTRODUCTION 5
1. History of the philosophical idea of time 6

II. EFFECT OF THE DOCTRINE OF EVOLUTION ON THE PROBLEM
1. Change and time 11
2. The philosophical vs. the scientific problem 12
3. The idea that change may be of relations only 17
4. Time and change are correlative 20

III. THE RELATIVITY OF TIME; THE SPECIOUS PRESENT
1. Of our estimates of time 23
2. The relativity of time itself to consciousness 25
3. The objective fundamentum of the time series 27
4. Kant on the time direction 28
5. The question of the irreversibility of the series 30
6. "Idealistic Eternalism" 34

IV. THE METAPHYSICAL CHARACTER OF TIME
1. Not an ontological continuum 36
2. Its infinity and infinite divisibility 37

V. THE RELATION OF "THE PRESENT" TO CHANGE
1. The specious present the only real one 40
2. Is there one "present" or many? 43
Ladd vs. Bradley

VI. ON THE UNIVERSALITY AND NECESSITY OF THE TIME RELATION 46

PART II

A Comparison of the Views of Time held by Professor Eucken and Bergson

A. Progessor Eucken's Conception 53
I. Moral Argument for the Existence of the Timeless "Geistesleben" 54
II. The Presupposition of Timelessness in Knowledge and Truth 56
III. His Conception of the "Present" 59
IV. The Implications of a Real History 61

B. Professor Bergson's Conception 67

I. His Theory of the Intellect as a "Spatializer" 68
II. His Disproof of the Idea of Intensive Magnitude 71
1. Its relation to the quality of conscious states 72
2. Its explanation by an unnumerical multiplicity 76

III. Is Conceptual Time Identical with Space? 78
1. If only one form of homogeneity is possible 79
2. And if space is that form 81

C. The Relation of Bergson's "Duree Pure" to the Timelessness of Eucken's "Geistesleben" 84

I. Its Function in Perception 84
II. Pure Memory and the "Geistige Gegenwart" 85
III. Succession and the Consciousness of Succession 86
IV. Degrees of Duration and of Timelessness 89
V. Relation of Spirit to Art 91
VI. Circumstantial Considerations 92
1. Both men accused of dualism
2. Bergson made out an "eternalist" by opposing writers
3. Relation of time order to cause and effect

ASPECTS OF THE TIME PROBLEM

The vast amount of discussion that has centered, in modern thought, around the idea of evolution and development, has almost raised anew the whole ancient problem of the nature of time and the slightly less ancient one of its relation to experience. The "Absolutist" is sure there is nothing in his view of the world that is in any way inconsistent with the fact of development in the concrete realm of phenomena; the "Evolutionist" is equally sure that the Absolutist denies in one breath what he affirms in the next. The Absolutist insists that to regard change and development as ultimate makes the very conception of such a thing impossible and absurd; the Evolutionist replies that to refuse to do so is to stamp the whole vast fact as illusion and sham. This debate may safely be regarded as the central interest in present philosophical discussion.

Professor Windelband has summed up the essential effort of Greek philosophy as the search for what is changeless. The cause of change and flux must be, in the last analysis, it seemed, a changeless ground; and to find this ground of things—whether by slow process of inference or by happy guess—is the ruling problem of ancient thought. Of course, it turns out to be a difficult logical exercise to deduce change from premises that do not contain it, or vice versa; and so it generally transpires that either change or permanence must be condemned in toto as illusion. But however intimately time and change may be related, it is evident that the problem in this simple form scarcely touches the question of the nature of time, since both sides assume it as real without inquiring the conditions of its being so. Temporal change and temporal changelessness are each essentially temporal affairs, and the Eleatics, quite as much as the Heracleitics, assume the reality of time. Of course, the change that is involved in time itself (change of future to past, etc.) is real change; but this the Eleatics, with all their passion for changelessness, did not think to deny,—and for the good reason, too, that their very conception of changelessness implied that minimum amount of change! They opposed a succession of similar moments to a succession of dissimilar ones, and this says nothing of the nature of succession itself.

Plato[1] and Aristotle approach nearest to the modern problem. The former became, in his later philosophy, a little suspicious of his own

[1] *Timaeus*, pp. 37-39; *Parmenides*, pp. 141, 152 f.; *Laws*, 676; *Republic*, x, 608· *Phaedo*, 107 (Jowett Tr.).

earlier attempts to get change into the world of things through the simple participation of empty space in the changeless *Ideas*, and provided his *Demiurge* to facilitate the difficult transition. But even here the principles of change and changelessness are given no essentially new form. To be sure, he condemns the world of "time" as inferior and unreal, but the "eternal" world with which he contrasts it is still a realm of temporal changelessness,—not a "timeless" existence in the modern sense of the word. In some translations at least he is even made to speak of his world of Ideas as "timeless," but there is no obvious reason in the context, nor in the whole general drift of his thought, to regard this as anything essentially different from the older Eleatic temporal identity.

Aristotle[2] narrowly escapes the modern problem. Change and movement he understands as characteristic of imperfection. In the struggle of matter to realize form there is change and all that it implies. But in the highest heaven there is only form, pure and changeless, and this eternal principle gives reality to the lower world. So, as Professor Bergson[3] has remarked, the *pure form* of Aristotle's philosophy is related to the material world as eternity is related to time. But so far all this theory of the eternal may still be interpreted simply as temporal lack of change,—just as in the case of Plato. But once at least Aristotle becomes dissatisfied with this simple alternative. He suggests that change and movement are not enough to make the reality of time,—that before time can be real the change must be "nombré" and this implies consciousness! In which case there could be no such thing as time, if the soul did not exist. This, he considered, did not make time absolutely relative since the soul possessed necessary reality. But his suggestion does contain the conception that time is relative to consciousness. Unfortunately, however, he did not follow out the idea to its consequences and so, however great may be the charm of finding the beginnings of everything in Greece, we must still admit that Aristotle was not a Kantian transcendentalist!

From Aristotle to modern times, perhaps even to Hume and Kant, there occurred no systematic development of the time problem. One finds many brilliant isolated conceptions but little tendency to emphasize them, even on the part of the philosophers themselves from whom they

[2] *Physics*, iv, ii, 14, etc. *Metaphysics*, p. 309 ff. (McMahon's Tr.).

[3] L. Constant, *Cours de M. Bergson sur l'histoire de l'idee de Temps*, *Revue de Philosophie*. Jan. 1904.

came. The Christian conception of eternal life in the future involves no new concept of time as such. Indeed, the very fact that it is located in the future, shows how far it is removed from a conception of timeless presence. (Cf., however, an article by Mr. McTaggert[4] in *Mind* for 1909, on the claim that real timelessness may properly be regarded as past or future!) And, of course, the chief concern of the middle age was with this very world view, so that the philosophy of the whole period makes the same general assumption of the ultimate fact of time that characterized the Christian and Greek conceptions. Of the isolated individual conceptions we need notice only a few of the more important.

In Plotinus there is the same sort of vagueness and ambiguity that one learns to expect from mystics in general. To be sure he looked up to an intense ecstatic state of unity with the Ultimate as the completest state of existence possible to man, and in this sort of experience particular relations of time and place tend to melt away. And, on the other hand, the content of this higher life spreads its details out in time. But in spite of this terminology, I doubt that it can at all be interpreted as a theory of timelessness. (1) Of course, time as such is not real for consciousness in such a state of mind; but then no particular thing whatever is at that time real as distinguished from other things, because there is no distinguishing activity going on there. Time is no exception to this rule, but neither, on the other hand, is it a distinct problem. So to say that Plotinus considered time as merely a phenomenal relationship would be like saying that, since Thales regarded everything as made of water, he must have regarded space and time as aqueous entities![5] And (2) the god of Plotinus is to all intents and purposes, the Ideal World of Plato, the eternity of which we have already construed as really only infinite time in a world where change is forbidden. Plotinus, if this be true, does not progress so far as Aristotle toward a really idealistic view of time.

There can be no doubt that St. Augustine[6] saw distinctly the great difficulties in the way of a systematic view of time. Here for the first time appear many of the haunting paradoxes in which subsequent philosophy has found it such a pleasure to revel and which, too, it has taken a century or so of modern thought to dispel. The fact that a temporal world cannot exist in a durationless present is itself, if taken

[4] Art., *Relation of Time and Eternity.*

[5] Cf., however, the article by Henry Sturt, in Vol. 25 of the *Encyclopedia Britannica*, on *Space and Time.*

[6] *Confessions*, Book xi, Ch. 14, 15, 16.

seriously, a final blow to any mechanical or mathematical view of time. This, evidently, Augustine saw very plainly, although he did not go far toward a solution. The world was not rescued from the danger of annihilation with which a geometrical present threatened it until, in modern times, time was made a derivative of consciousness. This procedure Augustine anticipated at least to the extent of seeking in psychic phenomena a solution for his difficulties. It does not seem to have occurred to him to ask what sort of existence he would have, in that case, to attribute to consciousness itself. And this, of course, would have to be included in any complete view of time.

With the beginnings of modern thought we find a growing suspicion, even among the Neo-Platonists,[7] that the bare, abstract identities of Plato are powerless to supply real change and process. Bruno and Nicolas de Cusa look to the principle of vitality to carry over from one event to another. The world is a living being and so, like us, can grow and grow older. Kepler escapes the identities of the Greeks in a doctrine of active force; and Bendetti, according to Bergson, showed, as against Aristotle, that the idea of movement is no longer absurd, if one agrees to the existence of an inner life through change. In all this there is the tendency to appeal to one's own inner experience to settle the problem of the outer world,—the tendency that has been so characteristic of modern thought. But it is also evident that these early attempts touch upon the time problem only indirectly through that of causality and change. But even that is enough to make their contribution noteworthy.

Descartes[8] stands at the turn in the road. His physics of the outer world is essentially Greek. It is systematic and clear-cut. His dealing with consciousness is original and empirical. This finds complete expression in his hopeless dualism of mind and matter. Unfortunately for the development of our problem, time fell, in his opinion, wholly on the side of extension rather than on that of thought. He therefore regarded it as essentially equivalent to the movement and change of that outer world. Most of his followers developed this phase of his philosophy at the expense of his more dynamic conception of the world of consciousness, which might have been more fruitful. And there has been no lack in recent years of philosophers who, in a similar way, identify time with change and movement. Whether such an identification can

[7] Cf. above, Constant's report on Bergson.

[8] *Oeuvres*, Vol. iii, pp. 97-99, Letter to Vatier, Nov. 1643.

be successfully carried through is a different matter,—one which can hardly be discussed here.

Spinoza's[9] abstract logical world would have admitted beautifully of interpretation in terms of ultimate timelessness, but if he ever explicitly held that conception he did not work out at any length its relation to consciousness or the world. To be sure there would be no change in the simple logical interdependence of the elements of his world, but this was also true of the ideal world of Plato. And mere lack of change in things is by no means synonymous with a transcendence of time relations. And if Spinoza came within sight of the latter it was soon lost to view in his supreme effort to overcome Descartes' dualism.

But Leibnitz[10] took the question more seriously and drew some conclusions of his own. With him the outer, merely mechanical world of Descartes disappears and all reality is regarded as having innerness,—if not always consciousness, at least something analogous to it. And time turns out, even in his world of preëstablished harmony and development, to depend upon the finitude of knowing subjects whose range is limited. For the Monad of monads who can see the whole infinite connection of things at once, there is no final or existential development. It is evident that this, if carried out to its ultimate consequences, approaches very closely to Kant's conception of the transcendent character of the ego,—so far, of course, as time is concerned. Otherwise there are fundamental differences that almost obscure what similarity there is between the two theories. And on the other hand, perhaps this very similarity in their views of time as relative to consciousness is partly to be accounted for by the fact that through Wolff, Kant was early brought under the influence of Leibnitz. And we must also notice that this same brief suggestion of Leibnitz anticipates the whole conception of the psychological present as it has been worked out in recent thought,—especially by Professor James and Professor Royce.

The mechanical side of Descartes' theory reached, perhaps, its most famous expression in the work of Sir Isaac Newton,[11] and to a less degree his predecessor Clark. Newton accepted the theory or concept of time as a simple phase of the outer, mechanical order,—a sort of continuum existing in its own right and moving at a perfectly constant velocity. All our measurements of time are ultimately measurements of move-

[9] Spinoza, Meta. Cog., C. 4 and *Ethica*, pp. 2, 270-276.

[10] Works of L. (Duncan's Tr.), p. 244 ff. and Russell, *Phil. of Leibnitz*, pp. 127-130.

[11] *Principia*, Ed. 1714, pp. 5, 7, etc.

ment, but time is the independent variable. It is only with reference to the constancy of the time flow that movement itself can be called uniform or irregular. Time is thus independent both of consciousness and of the varying changes of things. In short, we have in this theory the mechanical, geometrical conception with a vengeance. On the other hand, it must be borne in mind that Newton's interest was primarily in physical science where, at present at least, one deals explicitly in abstractions. Newton's conception is essentially that of the infinitesmal calculus, and must always remain the working assumption of abstract mathematics. But in order that the mathematics shall be true one does not need to assume the absolute existence of this abstract time any more than of logarithms or differentials.

Hume's[12] dismal failure to derive the concept of time from simple "impressions" is too familiar to need discussion. It is important in the history of thought, along with some other theories of Hume's chiefly in that it may have helped to awaken Immanuel Kant[13] from his "dogmatic slumber" and so led to his revolutionary conception of the absolute relativity of time to the synthetic function of consciousness. And this latter theory has so dominated the philosophy of the last century that any adequate mention of its multitudinous phases would be quite out of the question here. In Germany especially, apart from a certain semi-popular "left wing" now more or less rapidly disappearing, Kant's Kritik has remained the one supreme classic. One of the most remarkable things about the Heidelberg Congress a few years ago was its revelation of the great strength of the present Neo-Kantian tendency. And if, outside of Germany, respect for the classical tradition is not so strong, this much at least is true, that the problem has remained in about the form in which he stated it, however widely solutions may differ. When it is clearly seen that the idea of time is neither a sensation nor a combination of sensations, we are facing it from the direction of Kant's Kritik, whether we accept his complete table of categories or not. We shall, therefore, consider that with him we have reached the modern statement of the problem.

It was indicated at the beginning of this review that the notion of evolution that has so powerfully dominated the past half-century, has set the time problem in the very foreground. Now it is interesting to notice in connection with what we have said of Kant that he himself was

[12] *Treatise*, pp. 26-68.

[13] *Critique of Pure Reason*, pp. 24-33 (Müller's Tr.).

a pioneer in evolution theory. His vision was not limited to the scholastic cosmology that embraced something over six thousand years. Long before Laplace, Kant caught sight of the endless stellar past, and saw the solar system develop from a swirl of nebulae. Kant then, at any rate, did not regard a cosmic evolution as at all inconsistent with his epistemological theory that time is a product of the synthetic unity of apperception. And with this the question at once presents itself, How are we to look upon this implied division of labor between science and philosophy, when they come so near dealing with the same problem?

The effort to distinguish clearly between the philosophical and the scientific problem, and to understand the relation between the two, is a strictly modern product. The earlier Greeks thought nothing of having a cosmological theory that was in flat contradiction to their metaphysis. The former was "opinion"; it was inductive, realistic, concrete, sensory: the latter was "truth"; it was deductive, rational. The cosmology could be understood by anybody; the real truth only by the initiated. Even Parmenides had highly complex teachings as to the movements of the heavenly bodies; on the other hand he was perfectly certain from a "rational" standpoint that motion was quite impossible. And if many people even today seem to have analogous water-tight compartments in their minds, we shall probably have to admit that it is a more sophisticated distinction, not a naïve one. But we have not yet told the whole story. Not only did the ancient and medieval thinkers entertain at the same time a priori "truth" and scientific "opinion," but they complicated matters generally by the introduction of an a priori science which therefore occupied a sort of intermediate position so far as subject-matter and general validity was concerned. It was in this a priori science, however, that the evolution theory in modern times arose.[14] On the side of "pure" philosophical thought there had been, since the time of Plato, no room for talk of ontological development; the orthodox thinkers were bound by the whole movement of history to deny that change could be ultimate. But, it seems, from every other manner of man there came now and then suggestions of world development of a more or less definite sort, which found expression in Astronomy, Botany, Biology, etc., as well as in philosophies such as that of Leibnitz mentioned above.

[14] Cf. Osborn, *From the Greeks to Darwin.*

It was not until the year 1859 that empirical science came forth with a clear-cut hypothesis of evolution and, along with that, a good supply of evidence to base it on; it was in this year that Darwin published his masterpiece. Until there was evidence of the fact of evolution, it mooted little for the enthusiasts of the closet to cry their evolutionary wares; on the other side the conservatives of the cloister displayed an equally a priori array of fixities and immutables, neither competitor making a visible attempt to weight his airy productions with the concrete value of established fact. A few decades before the time of Darwin, however, the method of inductive science began to make an impression on the exterior of this ancient problem,—but on the exterior only. The facts (the observable positions and motions of the bodies of the solar system) admitted easily of such a genetic explanation, but the genesis, the progress, did not show up in the facts themselves. Lamarck and Laplace contributed facts and suggestions for explaining them,—chiefly, however, suggestions. But it was left to Darwin, through his prodigious capacity for patient investigation, to set forth in an orderly and systematized manner all the facts that were literally obtainable in his day, and suggest in outline the history of a measureless past as he read it in the organization, habits, structure, and embryonic development of living individuals and in the stratified archives of rock. Here was material that needed only arrangement and it would tell its own story; and to Darwin belongs the credit, not only of bringing to light vastly more of this material than had been accumulated in the centuries that preceded him, but also of arranging it in a simple and convincing scheme.

As a bare matter of history the world has thought so well of this work that at present to be familiar with its main outlines is a requisite of even an ordinary education. And more than that, the idea of development has become, to a very large extent, the organizing principle of the whole field of natural science, including even psychology and the sociological side of ethics. The complete scientific explanation of any fact must include an account of its origin.

Now it is impossible that so sweeping a change as this in the field of natural science should be a matter of indifference to philosophy. Many of the cardinal conceptions of the established philosophy had their rise centuries before scientific evolution was dreamed of, and might easily be quite inconsistent with the new way of regarding things. No literate person seriously questions any longer the general truth of scientific evolution. That is accepted; and if any of the conclusions of philosophy are inconsistent with it, so much the worse for them. The question

is no longer, "Is development a fact?", but rather "How are we to understand the fact of development?" Obviously the same thing cannot be true in science and false in philosophy; a science of change cannot associate on equal terms with a philosophy of fixity and temporal changelessness. If such contradiction exist, it is probably on the side of philosophy that rearrangement will have to be made. And it is further evident that if there is to be any readjustment of first principles, this will concern very vitally the ancient problem of change and time. Any alteration in the status of one of these involves a corresponding alteration in the status of the other, since the two conceptions are bound to be interdependent.

First, then, a word or so about change and its relation to the present problem. The time has passed, even in the realm of philosophy, when a solution could be accepted that amounted to a denial of the facts. It does not seem to have disturbed the Eleatics that their solution of the problem of change and identity flatly contradicted the very facts on which the problem itself was based. It only convinced them that there was something wrong with the world, not with their argument. The Christian Science method of disposing of the problem of evil is about the only overt modern parallel to this sort of logic. The former concluded that change is an illusion just as the latter insists that pain and evil are lies. The logic is essentially the same.

But while the ordinary scientist would laugh at this naïveté, still there is a sense in which scientific theory is always on the verge of a kind of Eleaticism. Ever since the time of Empedocles there have been periodic attempts to relegate change to "relations" and to hold that the ultimately real things,—atoms, corpuscles, electrons, ether—are changeless and eternal. Each ultimate particle, according to these scientists who have mistaken a working hypothesis for a metaphysical theory, turns out to be the ancient Eleatic "Being" in miniature,—the main difference being that they have multiplied this abstract ghost of reality by an inconceivable number instead of contenting themselves with one as Parmenides did.[15] The utter hopelessness of such an alternative is evident when we consider (a) that there cannot be change between things that is not somehow accounted for by change in things, and (b) that the relations themselves must be regarded as real—at least as real as the change which they embody, and, if we press the matter a little, they even threaten, as over against a horde of indiscernible "cores"

[15] Cf. Karl Pearson, *Grammar of Science.*

of changeless being, to usurp all the reality in sight.[16] This is logically, if not historically, the end of the matter. Strictly modern science has come pretty generally to realize that its proper field is a dynamic one; the reality with which it deals is a reality of action and interaction; its laws are laws of change. It would be more or less absurd to make evolution its central conception, and at the same time insist that change itself was only a surface phenomenon which did not penetrate into the reality of things. Modern science, at any rate, has no further use for the changeless core of being that some of our ancestors had such respect for. Things change through and through if they change at all; the change in things is just as real as the things themselves.

Nor has philosophy any particular prerogative by which it may hold to a changeless substrate through change while that alternative is denied to science. As a modern writer has said, it has been the custom of philosophers in the past "to pronounce holy ban upon change"; it is stamped as appearance, although it be appearance in which nothing appears; it is regarded as phenomenal and contrasted with changeless noumena, altogether to the advantage of the latter. But the remarks made above apply with equal force here. The appearances of things do not change unless the things themselves change also, and philosophy can have no more use for changeless noumena than science for changeless atoms.

Of course, philosophy would face the problem of change and time whether evolution were a fact or not. Indeed evolution, so far as it is an empirical law, only presents the old problem of time and change in a slightly altered and greatly exaggerated form. The staggering vastness of time and space as they are understood by the modern geologist and astronomer would indeed cause Plato or Aristotle to hold his breath; but all this appears to affect the situation for philosophy chiefly (a) in giving it immensely more time and change to think about, and (b) in making the call for a solution much more urgent. For science it is a matter of great importance which details in a certain series come first, and the exact relation in which each stands to all the rest. But philosophy can deal with the problem only in a general way. Its problem is not what particular changes take place, nor how many there are of them, but rather how change in general is to be understood; it is not the details of the process, but the ultimate meaning and reality of process that it seeks to determine. If a person understands the process of arithmetical

[16] Cf. Borden P. Bowne, *Metaphysics*, Ch. ii and iii.

division, it is a matter of logical indifference whether the dividend contains six digits or six million of them. The rule that completely explains the one operation just as completely explains the other. And precisely the same is true of the philosophical rationale of this problem of change. If the reality of a present changing thing can be satisfactorily construed in logical terms, it is a matter of small rational import whether the series of changes be exhausted in the present hour or sweep across an infinity of time. And so the problem faces anyone who has an ambition to form a consistent view of the world, not "Is change real?" but "What sort of reality does it have?"—"How am I to organize the idea of change into my general view?"

The fact that change is accepted as real does not solve this problem. To say that it is real is not the same as to say that it is absolute, although, of course, it is consistent with such a view. The Universe, as Professor James said, may be "more than one story deep"; that question is not preëmted by settling the scientific problem. An illustration, perhaps, may help us here. Suppose we imagine ourselves back in the midst of the realist-nominalist debate that once shook philosophical Europe so profoundly, and let us raise the question whether there are really universal ideas. Bishop Berkeley takes the position that we really have no general idea of triangle,—only a word and an image of some particular triangle to which the word, for the time being, attaches itself. Now there are a great variety of positions that a person might take in opposition to this radical nominalism. For instance, (1) he might hold simply that, in consciousness, there does exist the general meaning "triangularity" which is not the same as a specific image, even though it might always be accompanied by one. It is strictly a sense of general truth, a consciousness of the characterizing mark of all triangles. Or (2) one might hold that the general idea "triangle" exists as a sort of substance,—that it has a reality independent both of its embodiment in particular triangles, and of the thinking process by which one thinks the idea, i. e., some such a view as was held by John Scotus Erigena. Or (3) one might conceivably hold that the consciousness to which the idea is present, is itself triangular. Or, to carry our illustration to its extreme limits, one might hold (4) that the universe is triangular, or (5) that it is primarily a triangle! Of course, it needs no argument to show the wild absurdity of these last hypotheses; but granted that nobody holds such views, we may at least consider them as verbal possibilities, which is sufficient for our present purpose. We intend only to insist

that "triangle" might be real in one sense without being so in the others. That it should exist as an idea in thought is not the same as that the universe should be triangular nor even that consciousness should be triangular. And it is also evident that, while the first alternative makes it real, it does not make it so real as do the latter ones. In a sense every detail of the universe,—a dream, a shadow, a forgotten meaning—must somehow characterize it. The reality of the abstract idea of triangle at least proves that the universe is such that its character is sufficient to account for that particular fact. However, it is an altogether different matter, and it makes triangularity infinitely more real, too, to say that the universe *is* triangular!

Now the same thing may be true of change. To deny that change is an illusion is at least not necessarily synonymous with the affirmation that the universe as such is a process of change. This question, however, is not for immediate discussion. It concerns us only indirectly as a correlate of the time puzzle and so must, for the most part, be treated only by inference. But, while it is not our purpose to discuss the question in any thorough-going way, it may lead to more comfortable orientation, if we remind ourselves at this juncture of some cardinal reasons for thinking that change as we see it is not an accidental break in the calm of a measureless monotony, but is a very real and important aspect of being.

(1) When philosophers set out to define what is meant by a thing's being real, about the only predicate that seems available for the purpose is that of activity. If there is to be any mark to distinguish an existent thing from pure nothing, that mark seems to be energy, activity. A thing which never made itself felt in the world,—which never made a difference in the aspect and behavior of the world process, would be, so far as that process is concerned, non-existent. In other words, a thing is not actual unless it acts in some real way; and activity means change.

(2) In the next place, the knowledge function is itself a process. The self "appears" to be in a process of change, and that, by an argument analogous to Descartes' proof of its reality, is exactly the same as to say that it knows itself to change. This simply means that in the self change is as real as knowledge, and it is obviously absurd for knowledge to pretend to get back of itself. Of course, change is not the only aspect of the knowing process. It involves some sort of identity as well as some sort of change,—an identity which, in its relation with

change, makes possible the experience of continuity. In the first place, the mere fact of change in consciousness implies an identity of some kind in the existence of consciousness (since it could not change unless something changed); and in the second place, the consciousness of change implies at least relatively identical ideas in terms of which the change is known. And this "relatively" is meant in a perfectly literal sense; the ideas in terms of which we know change are just as "identical" as our experience of change is real, since it is only as opposed to the constancy of their meanings that we can become aware of change at all. But it is evident that the element of identity, both in the knowing subject and in its ideas, instead of contradicting change, is of a kind implied by the very fact of change itself.

(3) The object as well as the subject "appears" to change. Now it was said above that to say that the self "appears to itself to change" is precisely the same as to say that it *knows* itself to change. Can the same thing be said of this second proposition? Professor Ladd, for instance, holds that it cannot. Although "cognitive consciousness of change is convertible with cognition of actual change when the self is regarded as object,"[17] yet he insists, on the other hand, that while "things do certainly appear to me, and to all men, very frequently and somewhat indefinitely to change, I cannot immediately convert this claim into an indubitable proposition that things do, in reality, change."[18] This distinction the writer finds it difficult to follow. We are told that conceivably the apparent changes in the object might be due to "changes in the mental point of view" rather than to real changes in the object as it is in itself. But this assumes that it would be possible for the object to change some of its relations (at least its relation to my consciousness) without such change in relation resulting in, or involving, any change in the being of the object. But do relations exist and change independently of things? To the writer it seems quite incontestable that if one means literally relations *of* the things, any change in relations must stand for, and mean, change in the things themselves.

As opposed to this, however, we must take account of the claim of the neo-realists that some relations, at least, are "external" and so may change independently of things,—for instance spatial relations. Perhaps nobody at the present day would be seriously inclined to explain all change as a change of relations merely, of things in themselves

[17] Ladd, *A Theory of Reality*, p 145.

[18] *Ibid.*, p. 145.

changeless. This is the literal implication of much present-day scientific hypothesis but, as a rule, this convenient sort of mental picturing is not presented as a serious metaphysic. But, now and then, there does come this claim that relations can change without corresponding changes in the related things themselves, and this, oddly enough, not from "Absolutists" who are presumably interested in disclosing static realities, but from those who, in general, are determined to make change absolutely real! Professor James, for instance, in a well-known passage makes fun of the idea that "the-moon-as-looked-at-by-A" should be really different from "the-moon-as-looked-at-by-B."[19] And as so stated it cannot fail to be a good argumentum ad populum. The man of the street would hardly be inclined to imagine that his movements alter the equilibrium of the universe! But when the claim is definitely set up in philosophical discussion that relations of things can change without things changing, many questions and misgivings arise. (1) How much change of relationship, for instance, is compatible with changelessness in things? Is the being of the moon also independent of the presence of the earth, which is only a finite multiple of myself so far as spatial property is concerned? Surely not if we remember that its nearness to the earth's mass has, in all probability, put an end to the rotation of the moon on its axis, which, in turn, helps so much to explain the characteristic features of our stellar neighbor. The moon simply would not be what it is if the earth were absent, and in that case, then, the relation of the moon to the earth is not an "external" one. And now if it be replied that the presence of the above-mentioned A or B does not obviously affect the moon at all, and that therefore they can change their relation to the moon without the being of the moon undergoing *any* change, we must simply regard it as tantamount to the denial of the validity of all inference that goes beyond what is present to the senses.

And (2) one may very properly inquire if, in the passage quoted, Professor James really means by the word "relationship" what the word generally means. Let us suppose that x stands in a given relation m to y, but that it makes absolutely no difference to y. In what conceivable way would it differ from a relation m′ between x and z, granted that it, too, expressed no inner character of z. Or, to put it another way, we cannot say that two terms and the relation of these two to each other, is just the same as three terms, especially when the very definition of

[19] James, *Some Problems of Philosophy*, p. 89.

relationship must consist in distinguishing it from terms. There is something unearthly about a relation that is thus hypostasized as an independently changing existence or entity. And even on general principles one may justly hesitate to recognize a change in any part of a related system that claims to produce no change at all in the other parts. To the writer it inheres in the very notion of related parts that all changes should, in the last analysis, be reciprocal: in so far as there is system, all the parts would be affected by a change in any one part, and even apart from this notion of system all the terms actually involved in the relation should be affected by it just so far as the relation as such is real.

But however that may be, we are certainly ready to admit with an above-criticized author that "Agnosticism, whether positive or negative, concerning the transsubjective validity of the category of change undermines the entire fabric of human knowledge."[20] It is, I suppose, conceivable that all reasoning is untrustworthy; but as a matter of practical life it is utterly impossible to hold a view of which the only consistent expression is absolute silence (although it would, of course, be inconsistent for an absolute agnostic to recognize the claims of consistency!). And as soon as one departs from the hopeless tautology of wholesale doubt, it becomes evident that a knowledge process can stand in no intelligible relations with a static reality. Knowledge is not a mere "having" of states; it is not a succession of sensations and their copies,—of "impressions vivid or faint," as Hume would have it; it is not a series of externally caused mechanical alterations that consciousness suffers or undergoes. It is a kind of activity, an actual fact (literally "factus"—something *done*), not the mere bump of an outer stimulus on a tabula rasa. This is about the only modernly accepted view of the nature of the knowledge process, and one which for present purposes may safely be assumed. Now it is plain that if the real world is a series of things of which the only determining essence is immutability, then the process of knowledge is, by its very nature, at utter parallax with that world. In other words, a knowledge which is, as such, dynamic cannot possibly be a knowledge *of* a static world. We conclude, therefore, that the validity of knowledge implies a change that is just as real as the concrete objects of consciousness themselves.

The purpose of the foregoing was to show that change as an objective and subjective fact belongs to the very essence of the cosmic order,

[20] Ladd, *A Theory of Reality*, p. 148

the order with which science deals. That does not mean that it is the only aspect of said order that is real, nor that it is real in any sense in which some other aspects (as for instance, space) are not real. It cannot be illusion, even if it may possibly not be the final word about reality. The world of changeless "cores" either of the ancient or modern Eleatics is a fiction of the imagination. So much we may safely take for granted. Change in the objects of our world is as real as the objects themselves. Of course, on the other hand, a predicate true for the parts is not on that account true for the whole. On the contrary, it is often true that what holds good for the terms of a series is, for that very reason, not applicable to the series as such. But then something is gained if we have shown that change, in the world of things, is a stubborn fact that cannot be put aside as mere seeming, or shelved as belonging only to relationships. Logically temporal change is strictly coördinate with temporal fixity or changelessness, not subordinate to it; and on the side of concrete facts it seems overwhelmingly to predominate over this logical antithesis. For philosophy, then, it remains, and must remain, a fact of first importance.

The apology for this long introduction may by this time be apparent. Change and time, we might almost say, are converse sides of the same problem. Each in some sense implies the other, and each looks ultimate when viewed from the standpoint of the other. Change implies time, though not in a way that is easy to state. Change is not mere difference; nor is it mere difference in succession. The simple fact that a certain proposition is true at the present moment, and a certain other true at a future moment, is not sufficient to determine a fact of change. It is not necessarily change unless the two mutually exclusive judgments concern the same object at different times. This, of course, does not mean that a part of the object remains changeless. Indeed, if it did, we should have to say that our predications simply did not refer at all to that part of the object,—in other words, that it was really not a part of the subject of our judgments at all. We mean simply that the thing that changes must have sufficient identity in the two successive moments to embody the two successive meanings in its one existence; otherwise, we have difference but not change. Or, as we have said before, there must be something thought of as changing. But even apart from the question regarding their subjects, it is at least evident that the two judgments, or facts, would have to be successive in order for change to mean anything whatever, and the essential point we care to notice here is that the possibility of change is thus logically bound up with the equivalent reality of time.

And now, on the other hand, if we look at the matter from the standpoint of the concept of time, there are equally cogent reasons for regarding change as a presupposition of the reality of time. A static or changeless time is a contradiction in terms. The time relations of past, present, and future are by their very nature in a process of continual change. The present is no longer the present, if in it the relations of past and future congeal, the future would not be real future unless its distance from the present were constantly decreasing. The present is primarily the place of change of future into past, and without this qualification it loses completely its time character. Indeed this meaning of change which seems at first so remote and abstract, is so real on closer inspection that some have regarded it as the only real form of change. Mr. McTaggert,[21] for example, insists that it is the only form that is to be taken as a serious problem, which conception (even if Mr. McTaggert does later decide that it is all illusion!) makes this change of time relations more fundamental than that of qualities or dynamic relations, where people ordinarily locate the essence of change. But we do not need to adopt this extreme view in order to insist that time implies the possibility, nay, the actuality, of some change. This is the exact converse of the conclusion of the preceding paragraph, and, if both be true, then it is shown that time and change are so intimately related that they presuppose each other; and we may fairly conclude that the two facts in their ultimate being are correlative.

But not identical! One of the most fruitless ways of dealing with either of these is to try to reduce it completely to terms of the other. Consider, by way of illustration, the following selections from an article by V. Welby on *Time as Derivative*.[22] "There is no such thing as an ultimate problem of Time, nor even indeed of Space; the only ultimate problem for us in this connection is that of change."[23] And again, "I conceive that the idea of time has arisen because, becoming aware of, or realizing, experience in its aspect as a sequence of change, we need to measure it. Borrowing a space idea for the purpose, we measure it as a line; we see it in perspective. The 'measure' of experience thus gained we call time."[24] And once more, "Change, then, as occurring in space, with its conditional or concomitant motion, seems to be the central or original experience. . . . . Thus through Motion and

[21] McTaggert, *Unreality of Time, Mind*, 1908.
[22] V. Welby, *Time as Derivative, Mind*, 1907.
[23] *Ibid.*, p. 398.
[24] p. 393.

as the functions of memory and expectation develop, we ultimately translate Change into Time,"[25] etc. Perhaps these statements are not very vividly illuminating, but whatever plausibility they may have will serve to illustrate the point we have above aimed at,—that change and time imply each other. It is, in a sense, true to say that change plus memory and expectation produce the idea of time, because *if* we had the sense of change and the function of memory, etc., we would indeed soon have, as a result, the idea of time. But the haunting misgivings the ordinary reader has after following such a deduction are due to the fact that it would work quite as well in the opposite direction. If we had, for instance, a sense of duration or succession plus memory and expectation in their overt form, we would also have the idea of change. Of course, time without some change is impossible, but so is change without a before-and-after,—i. e., without time. It would doubtless be possible to prove in a most elaborate way that convexity is only a phase of concavity,—and that therefore "the only ultimate problem for us in this connection is that of" . . . . . concavity! A wonderful deliverance, to be sure, but possessed of the one serious fault that it does not get anywhere.

In a tone similar to the above mentioned article, Professor Liebmann insists that time is only ultimately change. He relates,[26] in a charming way, the ancient legend of the time when the whole world stood stock still until the prince should come to waken the sleeping princess, and adds that could such an absolute cessation of all motion actually occur there would be no such thing as time in the interval,—except, of course, for some onlooker whose vital processes were still going on,—perhaps in this case for the prince! But the very statement itself is hopelessly circular. What would an interval be in which there was no time? Possibly something like an opening in which there was no space! Of course, there would be no time if there were not at least the change of future into past, etc.; but then, neither would there be any interval. I doubt if the illustration itself, or the point that it is meant to illustrate, could possibly be stated in a way that would in the least conceal the circle that inheres in it. At any rate, the writers we have here taken as examples certainly fail to do so.

For our present purposes, then, we shall assume without further discussion that change and time are, in the degree of their reality, strictly correlative. This does not mean that the more change goes on the more

[25] p. 396.

[26] *Zur Analysis der Wirklichkeit*, pp. 108-109.

time passes by, but that to just the extent to which we admit the reality of change we are bound to admit the reality of time, and vice versa. This necessity we shall try to abide by in the discussion that follows.

THE RELATIVITY OF TIME

Anyone who reads this is familiar with the old paradox concerning the dubious existence of time. The past and the future by definition do not exist; only the present is real. But the present turns out to have no duration, and so it, taken alone, is not properly time at all; therefore time does not exist. And I suppose that one might just as well add that since, by definition, the present is only a part of time, it too is non-existent if time as such does not exist. Thus we seem, as Berkeley once remarked, "lost and embrangled in inextricable difficulties."[27] Professor Fullerton[28] has called our attention to the fact that something over a thousand years ago St. Augustine was disturbed on this same point. "Those two times, past and future, how can they be, when the past is not now, and the future is not yet? . . . . . Where, then, is the time we may call long? Is it future? We do not say of the future 'It is long'; for as yet there exists nothing to be long. We say, 'It will be long.' But when?" Surely not when it is present, etc., etc. His solution,—that "long," "short," etc., when applied to time, must be interpreted in terms of memory and anticipation only evades the point by transferring the whole discussion and its interest to another field. The question is by no means obsolete, and perhaps we must count ourselves lucky if we can dispose of the matter as well as he did.

If we are to give common language any consideration at all we shall find some of its expressions about as near a real theory of transcendence as some other of its expressions are far away from such a theory. While it would be scandalized at the suggestion that any past moment could be real, it would be equally offended if one should say, "There is no such thing as the past or future!" On the one hand the past is not real; that is a matter of course. But on the other hand, there is certainly a real past. It does not do to try to force common sense to be content with saying that the past *did* exist, because then it was present, not past at all. No, there *is* a past,—at least I do not mean sheer nothingness when I speak of it. It is no wonder that common sense is so frequently outraged by the "philosophers" because, in the chaotic, hit-or-miss accumulation of common sense judgments that the race has acquired,

[27] *Principles of Human Knowledge*, Par. 98.
[28] *Introduction to Phil.*, p. 90.

there is great enough variety to make sure that no matter what conclusion thought might come to, it is bound to contradict a whole lot of them. Common sense, in its deliverances on such questions as the above, is just about as idealistic as it is anything else,—but then, of course, it is not consistently anything.

Augustine, as we saw, seeks refuge in the thought that long and short time, etc., as we know it, is relative to our memories, expectations, and purposes. This was, no doubt, to a certain extent, an evasion of the problem he had started out with. But, on the other hand, a theory of time must be consistent with all the facts, and psychological facts are as much facts as any others are. What he made out was, essentially, that time as we know it in our living experience is relative to our present situation, to the memories we treasure and the plans and hopes we have at heart. "As we know it in our experience—," but I do not see that we have anything else to go on than just that,—any other way of knowing it, or any outside experience to build our theory on. So, it may not be amiss to review hastily some of the respects in which our time is relative.

That at least our estimates of time are relative scarcely needs pointing out. If a great need oppresses us and time is required for its satisfaction, it makes little difference how much cosmic change goes on during the interval, that interval is long for us in every sense of the word. For the young the days are short but the years are long; for the old the years are short but the days are long. The hour of monotony is longest in passing but shortest as remembered; the hour of pleasure is shortest in passing but longest in memory, etc. And this relativity is true even on a much greater scale. If a gnat's wing executes fifty consciously directed movements in the shortest duration that is discernable to us, then, as Mr. Spencer[29] has pointed out, its notion of a day must be vastly different from ours. And so far as that is concerned there is no a priori reason why there should not be beings, as Professor Royce[30] suggests, with so different a time-sense that they would live whole geological periods in the time that for us would be practically negligible. And similarly, there might easily exist beings who would regard the eternities of our astronomical cycles as too brief for serious consideration.[31]

[29] *Psychology*, Sec. 91, quoted by James, *Principles of Psychology*, Vol. i, p. 639.

[30] *World and Individual*, Vol. ii, p. 130 ff.

[31] Cf. also Coudillac, *Treatise on Sensation*, Ch. iv, and K. E. von Bär, *Welche Auffassung der lebenden Natur ist die richtige?*

Considering the question from a slightly different standpoint, we may inquire whether there are not types of experience common to us in which there is no time consciousness. In his *Principles of Pragmatism*[32] Dr. Bawden suggests that there are states in which the ordinary distinctions of means and ends, hope and memory, past and future, are forgotten, and when, from the standpoint of conscious time relations, the state of mind is practically absolute. He offers, as an example, the state of mind of a man who has just realized his ambition to complete a savings account of one thousand dollars in the bank. The unalloyed joy of success is oblivious of age and change. But while we have no disposition to doubt the existence of states of consciousness which, seen from the inside, are untemporal (on the contrary we are quite convinced that such a condition is frequently realized in cases of artistic absorption and contemplative abstraction), it seems to us nevertheless that the illustration chosen by Dr. Bawden is unfortunate. One would think that the state of mind of the man he describes would be preëminently one of "Now at last, after all this effort," etc., rather than a time-forgetting ecstatic inundation! But however that may be, there are instances enough in which the ordinary considerations of before and after, means and end, etc., are absent and to which Dr. Bawden's remarks would well apply. It is interesting, by the way, that even he, a pragmatist, uses with reference to them that mystical phrase "collapse into immediacy"[33] which, I believe, comes from Hegel, the absolutist of absolutists!

But while the point he makes is in all probability a valid one, it does not seem to me to be of the greatest importance so far as the general theory of time relations is concerned. It is from the consciousness of time, not the unconsciousness of it, that we must get the data for our final view. We shall therefore omit, for the present, any detailed discussion of this interesting phase of the problem.

The one great premise that our immediate experience gives us is simply that we are literally conscious of duration. As Augustine insisted with a quaint, dignified sort of petulence—"And yet, Lord, we *do* perceive periods of time and compare them with one another!"[34] Not that we feel pure time buzzing along by itself, but we nevertheless immediately know succession with its implied dip into past and future. This we

[32] p. 309 ff.

[33] p. 310.

[34] *Confessions*, Book xi, Ch. 16.

could never do were we limited to the data that one indivisible instant of time would afford. To know that change is going on at all the presence of some finite amount of the process to consciousness in one whole is absolutely necessary. Professor Fullerton states the case as follows, "No instantaneous photograph of consciousness, however much memory, etc., it could show, would give any clue to the idea of duration."[35] And so "it is only necessary to take one's stand upon the fact that we really are conscious of duration, and to keep clearly in view what this implies."[36] The span of consciousness must, that is, include more than one instant, and this span marks out the limits of the present for the consciousness referred to. Says Professor Ladd, in a passage which he certainly forgets later in his discussion, "It is the grasp of consciousness that gives to the 'now' of time experience all the reality that it has."[37] In short, whatever one may choose to think about the reality of what we shall call the "logical" present (that is, the mathematical present,—the one without duration that merely divides past and future) in the external world, that logical present is just as "external" to concrete experience as is the hypothetical world of abstract law in which the mathematician places it. Of course, if consciousness really existed in any such an absolute present as that, it could never know the present at all as a division of time.

But if, for us, the present seems to be relative to the scope or span of consciousness, is it not at the same time relative to events that are going on in the world at large? In one sense that seems to be the case. The change of the cosmos is largely independent of us, including even most of the periodical rhythms of our own life in terms of which our estimates of time are balanced. But no appeal to the cosmic movement back of, and in, these changes will help to solve the present problem. Let us admit that the time sense would be impossible without change, and that most of that change is beyond our control, not excepting the organic rhythms we spoke of, and then let us try to define the present in terms of such change. I do not think it can be done. One may say, for instance, that the present is the actual point of change; that our conscious present, to be sure, seems to cover more time than that, but that if we were only capable of discernment sharp enough we would see that the remainder of that "present" was really past and future. But

[35] *System of Metaphysics*, p. 205.
[36] *Ibid.*, p. 207.
[37] *Theory of Reality*, p. 188.

there are difficulties here. In the first place, (a) one must at best locate this real point of change in terms of the conscious present, if it is to have any meaning at all. It turns out that the "real" present is that point of the apparent present at which change is actually going on; and this implicitly gives all the logical priority to the conscious present as we actually know it. And further (b) it is perfectly meaningless to say that it is the point of "real" change, since our knowledge of the past is as really in terms of change as is our knowledge of the present. The only meaning that the word "real" could possibly have in this connection is as synonymous with "present," in which case, of course, the definition is completely tautologous. And (c) as a simple matter of fact the conscious present does not contain any such crucial point, or ridge, or watershed at which "real" change goes on, ahead of which all is ideal and indeterminate and back of which finished fact lies silently in state. On the contrary we are directly conscious of a finite amount of change going on over a perfectly real span of consciousness, and our sense of control of part of this world of our conscious life is just as expansive and inclusive from the temporal standpoint. That is, in our volitional control of elements in experience, we do not simply have to strike instantaneously at an event as it slips over the hair-line of the transit; it is subject to our direction, if at all, during the whole period that we call the specious present.

Of course, this specious present has no perfectly definite boundaries. Its scope is wider for some people than for others; for the same individual it is more inclusive at some times than at others; and never is it distinctly marked off from the past and the future. The concrete life of the present with its sense basis gradually melts away in both directions into complete ideality,—the ideality of memory on the one hand and that of anticipation on the other. But, although no clear line may be drawn between them, these types of fact are in the main as easily distinguishable as day and night, which latter are never very seriously confused on account of the gradations by which one dissolves into the other.

One thing that surely seems to relate our time consciousness to some outer necessity of a cosmic sort is, as so many have pointed out, that the series is irreversible. We may hope and plan for the future, but so far as the past is concerned, "What's done, 's done!" In a sense remorse is hope turned wrong side out; it is our volition beating its wings against the barred gates of the past. In short, the "direction" in which we must go is absolutely fixed in the nature of things,—a determination,

of course, which needs explanation. Kant[38] held that the order of events in time for us depends upon an abstract and necessary law of causality by which we see one fact to be the antecedent and the other the consequent by virtue of the necessary dependence of the latter on the former. A heavy ball, let us say, is placed on a pillow and makes a depression in it. If our knowledge of the properties of cushion and ball is at all correct, it is at once evident that the depression must follow the placing there of the ball; on the other hand, the depression in the pillow might have been caused in an infinite variety of ways. Thus, while it is possible to deduce the effect from the cause, it is not possible to determine the nature of the cause from that of the effect. In this fact, then, we have a basis for the definite direction, or order, of our time series.

This conception Professor Rogers[39] criticizes as resting upon a loose and gratuitous conception of cause and effect. As Mill has shown, the real and complete cause of any event is the whole universal state of things immediately preceding it, and the complete effect is the state of the whole universe in the instant following the cause. And if the relationship be understood in this more exact manner the connection, if necessary in one direction, is equally necessary in the reverse direction. Or, to go back to the illustration cited by Kant, the depression in the pillow is compatible with more than one cause only if we consider this one fact, the depression, out of all connection with the rest of the universe. But this abstraction is unwarranted. This fact in reality exists only in connection with the others; and if we knew all these others it would appear that nothing else than just that lead ball could possibly have been in just that place at just that moment, and it becomes just as easy to see the cause in an effect as the effect in a cause. In other words, the term "t" in the equation of the universe may be given either a positive or negative value with equal mathematical propriety. We make it positive when we wish to figure forward and negative to figure backward. One is just as safe in calculating the eclipses of a thousand years ago as in predicting those of a thousand years to come. Thus there is no rational necessity in the laws of phenomena on which the order of events in time may depend, and so the basis of the distinction of past and future must be sought elsewhere than in the series considered either (1) as phenomena of mutually exclusive moments, or (2) as related terms of cause and effect.

[38] *Critique of Pure Reason*, Second Analogy, pp. 155-172 (Müller's Tr.).
[39] R. A. P. Rogers, *Meaning of the Time Direction*, *Mind*, U. S. xiv.

In this connection, however, a dangerous suggestion is made, even though it is formally guarded,—the suggestion that if the direction of every particle in the universe were suddenly reversed while yet it kept exactly the same velocity, phenomena might run back over their past history in reverse order to that in which they have actually occurred. Professor Ward[40] also discusses this question and, I believe, comes to a similar conclusion,—that is, in so far as phenomena are considered as a necessary sequence of cause and effect. And so long as one's attention is limited to such purely mechanical and molar series as lunar eclipses the suggestion seems an altogether probable one. But one gets into trouble if one tries to apply it very widely. The steam confined in the cylinder of an engine, let us say, is expanding when the shock of this universal reversal of all motion comes. Suddenly the direction of every bounding molecule of the gas is exactly reversed. Will the bombardment of the walls of the cylinder by these molecules be diminished? The kinetic theory of gases will hardly permit us to say that the pressure on the piston would in such a case be changed to a kind of suction, and so its motion consistently reversed! Or, to take a still more obvious case, it is probably evident that a change in the direction of movement would hardly start the organic processess in a grown man back toward babyhood!

We do not, however, conclude from this that the law of necessary causation is not reversible. On the contrary, we agree heartily with Professor Rogers's contention that, considered as an objective series only, the events of a closed causal series have no mathematical preference for one direction over another. But the above illustration is unfortunate simply in that it does not cover all the facts. It conceives of motion, only, as being reversed; and that would be an adequate example for the point in question only if one were prepared to hold that all relations of cause and effect are reducible, not merely to motion, but to *direction* of motion, simply. No one who has heard of chemical relationships, for instance, would care to try to reduce them simply to types of motion, the only determinants of which were velocity and direction. The above illustration, therefore, we seem bound to regard as a misleading one.

[40] Jas. Ward, *Naturalism and Agnosticism*, Vol. i, p. 203. In this discussion he at least quotes Helmholtz (*Wissenshaftliche Abhandlungen*, Bd. iii, p. 594) with implied agreement with the latter's position. And Helmholtz holds that a complete reversal of all atomic movements in the universe *would* start the whole process of evolution backward.

The reason for discussing that illustration so much at length is simply that it is so often met with in the literature of the subject. As indicated above, we are in perfect sympathy with the general conclusion to which Professor Rogers comes, that, apart from the facts of consciousness, the very distinction of future from past (in that sense, the "direction" of the time order) is rendered logically impossible. It may be a little extreme to say that "desire, then, is the subjective element which gives a meaning to the distinction between past and present," but if we understand desire to stand for all allied conscious functions such as regret, hope, satisfaction, memory, anticipation, etc.,—the concrete orientation of experience in general, we must certainly accept the conclusion to which this author comes.

But in spite of the fact that this brings us back so abruptly to consciousness again as the source and ground of time distinctions, the claim will not down that this given drift of the time series must link it to some controlling outer necessity. It is sometimes pointed out that in this one respect (irreversibility) time differs very conspicuously from the other serial relationships in terms of which our experience is built,—that, while it is possible to regard space as one of our ways of relating things, time must, in view of this difference, be regarded as rooting deeper in reality. But as the statement is ordinarily put, does it really compare the spatial and temporal series on an equal footing? Suppose we say that the spatial series is reversible while the temporal series is not. This means, let us suppose, that a real object may traverse a given part of space a second time, while a given period of time can be experienced but once. This, I think, would be the ordinary meaning. However, it must be evident on a moment's thought that in these two alternatives, spatial and temporal terms are thoroughly tangled. Suppose an object *does* traverse exactly the same space a second *time*; can it be said that we are dealing here only with the spatial series? What would a second *time* have to do with a purely spatial series? On the contrary, is not time here the central fact of the whole situation? In which case we must state the supposed alternative as follows: A given series of points in *space* can be experienced a second *time*, while a given series of points in *time* cannot be experienced a second *time*. That is, a spatial-temporal series is compared with a temporal-temporal series, and it is no wonder that a difference in principle should be found to obtain between the two. We set out to compare time with something else, and then state the proposition in such a way that time becomes the common denominator of both,—of itself and of the other series with

which it is being compared. No final comparison can be made on these terms.

But perhaps there is another way to understand the whole contention. Suppose we say that direction is the only thing referred to in this case. When it is said that the space series is reversible while the time series is not, we should then mean that an object can go in any direction in space while time changes in only one direction,—from past toward the future. But here again, it seems to me, we have failed to oppose a spatial to a temporal series in a simple and coördinate manner. Is direction of movement any more a spatial than a temporal phenomenon, even when the movement is ordinary spatial movement and the direction, therefore, supposedly a spatial direction? Movement, like any other change, is inherently a time function. Take any two points on the path of a moving body, and the direction of movement means simply which of the two points was occupied first (i. e., in time). It appears, then, that instead of a simple space series, we have, on this side, a complicated space-time function. And the other alternative would, on this view of the problem, be little better off. What could one possibly mean by "direction" in time anyhow? Of course, we will be told that the expression is figurative merely; but is there any way to state the idea so that it would not be figurative? A figure is not a fortunate one when it usurps all the meaning to itself and completely conceals the analogy it is meant to embody. At any rate, it is evident that here again we are not comparing a simple space series with a simple and coördinate time series, and that is just what ought to be done if the distinction in question is to be maintained.

And if, now, we get away from the purely spatial metaphor[41] usually inherent in our notion of time (as when we spoke of "direction" in time a few lines above) the situation simmers down to about this. Space and time are names for certain serial quanta in experience. Since they are quanta I can refer to them in terms of number and magnitude. I can measure a hundred feet or miles or millimeters in space, or a hundred hours, or seconds or centuries in time. To be sure I cannot wait five hours into the past. But then, it would be about as easy to do that as to walk a minus five miles in space! In neither case does a negative quantity have other than a symbolic application. In other words, the ordinary method of elevating time to a position of less relativity to us and to our experience consists in stating it in terms wholly metaphorical,

[41] Cf. Bergson, *Time and Free Will.*

taking the metaphor in a perfectly literal way, finding that as so taken it breaks through in spots, and then finally announcing that therefore time is possessed of some very remarkable and even mystical peculiarities! This does not prove much, and we are left about where we were a paragraph or so back: Time as we know it is largely relative to the form of our own consciousness even for its distinction into past, present, and future; and all these terms would be utterly meaningless if abstracted from their experience-basis in which they find their origin and only support.

"Yes," it may be said, "time, as it indeed seems to us, is a function of conscious experience; but we ordinarily distinguish between a duration that 'seems' long, and one that really 'is' long. The week before vacation seems infinitely longer in passing than does the vacation week itself, but I know that as a matter of fact the two weeks are of the very same length. My consciousness is a timepiece but a poor one after all, and I have to be continually setting it right by reference to the great clock of the cosmos which has circling planets and stars for its wheels and hands. Each conscious being has a 'time' of his own, but such time, nevertheless, is even consciously relative to the real outer Time. I may swallow a few grains of the appropriate drugs and my time values will be so altered that I may seem to live centuries during the course of a few minutes. But I awake and find that the sun is not far from where it was when I went to sleep; the flowers on the table have not yet wilted; and I forthwith decide that my appalling longevity was only a dream."

Such, undoubtedly, is in a large measure true, but still I doubt that the "cosmic clock" is our whole criterion. In the first place, whence comes my conviction that the sun goes at a fairly constant speed and that days are all of about a length? I surely do not know this in advance of experience, nor have I esoteric information on the subject from a higher source. As a matter of fact we have decided that the sun does *not* always go around the circuit of its apparent path in the same time. We go by mean solar time for the explicit reason that we consider solar time altogether too erratic. But this only pushes the question one notch further back: Whence my conviction that the stellar universe makes one apparent revolution in exactly the same time in which it makes any other? or that my chronometers and the "laws" that run them proceed at a perfectly uniform speed? There are two conceivable reasons for this conviction; or better, perhaps, one reason with two sides to it. In the first place, such an assumption affords us a common standard of reference in the complex life of society; and in the second place, we find

that an assumption of such uniformity in nature is about the only way we can reduce our own thought life to any sort of system. In other words, the "real" time, over against which we contrast the "seeming" time values of our varying experience, is itself an assumption of which the sole warrant is that it makes our experience *seem* right!

(b) One other consideration along that line. A certain day seems short to me, but since the sun has gone across the heavens but once during that period, I conclude that I am wrong. But suppose that it seemed short to everybody; then suppose that the next day seemed unspeakably long to everybody. The chances are that we should decide that our "cosmic clock" had itself gone wrong! In other words, we would be back to our only really ultimate criterion again.

If now, we should say that time as it exists for us is "relative," the meaning ought to be fairly plain. And if we should say that in some sense conscious experience "transcends" time, the second statement would mean nothing not included in the first. It is not a case of bringing in the "psychological monster" that Mr. Bradley so savagely anathematizes. It requires no reference to a noumenal finite monad or any other deep and dark mystery of that kind. It is a matter of simple and direct conscious fact that time relations exist and come to their focus within the activity of intelligence, and it is here insisted that this is not so much an hypothesis to explain consciousness, as it is a description of the conscious facts themselves. And finally, if it should be said that in its existence consciousness, to just the degree to which it is able to bind successive moments together in one experience, is itself "timeless" (and this, I suppose, is about the most infuriating word in the whole philosophical vocabulary to those who do not hold a view of this type), that word, too, need refer to nothing any more mysterious than do the other expressions just used. To say that, even in our limited experience, the time distinction, or the time relation, occurs as a conscious product just so far as it is real to us, is just the same as to say that to this extent the subject of the temporal experience is timeless in its existence and ground.

And it may be well to point out here again that however real are the states of mind in which the time aspects are lost,—the states of artistic appreciation, contemplation, etc., that were mentioned above—these are the exceptions that really prove the rule (i. e., "test" it,—not demonstrate or disprove it, as the expression is so often used to mean),—they do not constitute the facts on which it is primarily based. As was said before, it is the consciousness of time, not the unconsciousness of it,

in which time is most obviously transcended. It is not when one is lost to the world in day-dream, but rather when his grasp on the passage of events, with all its concrete duration, and all its richness of movement and change, is firmest,—when, indeed, his reflective consciousness of transcendence is least; it is then that the real time-transcendence of consciousness is most assured.

This point we can, perhaps, enforce by a brief reference to Professor Lovejoy's article *The Place of the Time Problem in Modern Philosophy*.[42] In this it is insisted that "idealistic eternalism" rests on a "deep-reaching confusion of conceptual time with the real time of our inner life,—of thinking about a transition with the transition itself." This view we do not need to discuss in detail here for two reasons. In the first place, it is very closely allied to Professor Bergson's conception of time to which latter a subsequent section of the present paper is devoted. And, in the second place, we must resist the temptation to elaborate the point that Professor Lovejoy's theory, like any other theory, is a "way of thinking about" change. It is always easy to accuse the opponent of using "mere ideas," but the accusation always involves the entertaining circle we have just referred to, and which numbers have pointed out before. The present purpose is merely to ask if it is true that eternalism is necessarily a reflection of conceptual time.

In the first place, no one, surely, would regard the specious or psychological present as an abstract or conceptual affair. It is the very reverse. The older view according to which the present is a point of zero duration might fairly be regarded as conceptual since the present according to that view is a mathematical vanishing point, indiscernable in concrete consciousness. But this is the very view that leads to the hopeless difficulties that Augustine met with in his speculations. If we think of the actual present as being the durationless one which does not appear in conscious experience at all, that surely is not a really idealistic view of time, which by very definition would mean the locating of it in the psychic world. If there be any view that should be defined as "conceptual" as opposed to concrete, that is the highly abstract conception of Newton above referred to. Time that "flows" at an absolutely conscious rate, that boasts a present that can only be reached over the hard road of mathematics and which therefore is forever shut out from immediate experience,—such a view is indeed conceptual to an almost desperate pitch. But it is also thoroughly *realistic*, not idealis-

[42] *Journal of Phil., Psy., and Scientific Methods*, vii, p. 23.

tic at all! If "idealistic" means that the real world is ultimately a a spiritual one and rests on the life of conscious experience, then we must insist that conceptual time of the sort Professor Lovejoy alludes to, points in precisely the opposite direction.

And on the other hand, the specious present on which we have sought to base the view here set forth is a fortiori *not* an abstract affair. It is empirical through and through, rather than speculative "in the bad sense of the word"; it is concrete rather than conceptual. The time that consciousness holds in its grasp has real duration; instead of being an indistinguishable dividing line, it owns a real succession,—it weights consciousness with actual concrete movement of facts. And, as we have insisted so much, it is this very inclusiveness that, understood from the side of its ground, stamps consciousness as to some extent transcendent. Of course, the individual consciousness known to each of us includes only a very finite amount of sequence within the boundaries of its horizon. But then, this consciousness itself is finite too. The fact that its span is limited does not, on the one hand, make it any less a real inclusion of time relations within itself; nor, on the other, does it imply that time, as viewed from the standpoint of such experience, is conceptual or abstract. Time that is only symbolically represented in thought is, in so far, *not* the concrete, immediate, passing change in experience and so is not in the real sense of the word transcended by consciousness at the given moment. And if consciousness transcends time to just the degree that, in its existence, it rises superior to the mutual exclusion of all the infinitely many parts of the time continuum, then the time which, though mathematically infinitely divisible, is nevertheless present to consciousness as a whole, cannot be abstract any more than the existence of that consciousness itself can be abstract or "conceptual." In other words, the specious present as such means that a definite amount of actual transition, not simply of thinking-about-a-transition should be immediate to consciousness.

Of course, when the absolutist says that, just as our finite consciousness spans a finite amount of time, so an infinite consciousness would cover, in its single glance, an infinite amount of time, he is dealing in what must be, *for him*, only symbolic and conceptual. But so is any world view when presented by any one not immediately conscious of the whole world itself. But if this is a fault, then all inference is fallacy,—all conceptual thinking, even though it be about concrete things, is a fallacy of abstraction. That surely is a little extreme, especially for a philosopher!

Down to this point very little has been said about a metaphysical aspect to the problem. Granted that time, as we know it, *is* really a construct of relations in experience, perhaps that does not say what it is in itself. The whole world of things is, for that matter, in a sense my ideal construction,—in so far as I can be said to "know" it rather than merely to feel it. Surely something exists! This may roughly represent the attitude of the reader at this stage of the discussion; and to this consideration we shall therefore turn at once.

The apparent "reductio ad absurdum" of this criticism it is possible to accept completely. To be sure things are also conscious constructions as much as is time. We have said in the introduction that change is just as real as are the things themselves that change. It is not a surface phenomenon. And we also saw that the reverse side of change is the correlative fact of time, which is therefore just as real as things. But if there is one point on which modern philosophy is practically unanimous, it is in its complete repudiation of the old Kantian things-in-themselves. Things as elements in experience we know directly, but the notion of noumenal things is as useless as it is meaningless; the things-in-themselves are as unaffirmable as they are unknowable. And in a similar way, the outcome of the foregoing discussion of the notion of time is simply to deny that there is any cause for holding to an objective, metaphysical time-in-itself. If the other relations that hold good in experience, such as far and near, large and small, substance and quality, cause and effect, etc., are to be understood as functions of intelligent relating activity, and as having their only conceivable reality there, then exactly the same thing is to be said of the temporal relations of coexistence and sequence. And it is no more queer in the last instance than in the former ones. And surely if one adopts the view that ideas are essentially and only instrumental, rather than representative, this conclusion follows of its own weight.

Of course, there are some ways in which time really seems to be an entity in itself. We say in common parlance, it "takes time" for things to happen. As soon as the cause of a fact is complete, the fact should be real, but we find that a necessary part of such cause is always a certain amount of time; before this is given the event cannot happen, no matter what the driving force behind it, and with the requisite time the causal setting is made complete. Thus the time element does indeed seem to "make a difference" in things. But, should there be anything plausible in the foregoing, let the following suggestions be considered: (1) The time relations are certainly real, but are they any more real

than are the other relations in the world of phenomena? Is the age of anything any more real than its size or shape? Is the hour that is struck more real than the clock that strikes it? If the practically infinite sweep of cause and effect that relates everything in the universe to every thing else,—if that can be understood as having its reality as a function (in this sense as a "category") of Intelligence, and so as requiring no reference to any archetype having an extra-mental, independent, noumenal existence, it would not seem like a greater stretch of the imagination to regard in a similar way the relations of coexistence and sequence that hold within that Universal Life. And (2) to make time a thing in any real sense of the word is completely to detemporalize it. Things may grow together in a temporal way, but it is a simple contradiction in terms to regard time itself as one of these things.

If there is no ontological entity or continuum corresponding to our conscious time, are we compelled, then, to say that time is "only" or "merely" subjective? That all depends on what one means by "subjective." (a) Time is not subjective in the sense that it is arbitrary or consciously doubtful or tentative. (b) It is not subjective in the sense that it is an individual whim, or in any way special to me. We saw above that our notion of the "right" time has a very evident social reference. Time seems to be a common measure of experience in general. (c) It is not subjective in the sense that only the conscious subject in experience is conditioned by it. It is just as real in objective experience as in subjective, if indeed not a little more so since we are perhaps more conscious of change in the objects of experience than in ourselves. But it *is* subjective in the sense that it is not an independent reality transcending intelligence and conditioning it from without. If conscious experience could be blotted out there would be no such thing as time; such words as "now" and "then," "before" and "after," "past" and "present," etc., would be absolutely inapplicable to the nothing that would remain. In this rather derived sense we may say, and I believe must say, that time is merely subjective,—that is to say, subjective in the same sense that all other relationships of experience are subjective.

But at this point there may come an objection from another source. We are convinced that there is a real time that is infinitely divisible and also infinitely long. In conscious experience we find no such fact as this, and yet we cannot deny its ultimate truth without giving the lie to our whole time-consciousness. If the fact of infinite divisibility be real, then the real present is the mathematical vanishing-point of an

infinite process of division,—i. e., zero duration. If the proposition that time is infinite be true, then the limitations which the very process of ideal determination seems to require are only apparent, and real time, as over against this, is infinite. Therefore, in its own marks of fragmentariness and crude approximation, our conscious time reveals its inherent reference to an ultimate and extra-mental Time beyond. But even this sort of argument does not turn out to be conclusive.

If the idea of infinity and infinite divisibility has no basis in concrete experience, where, in the name of all reason, does it come from? We seem to know what infinity in both directions means; at least we know the essential "marks" of these things well enough to recognize their absence from our own span of duration. The fact is, of course, that the notion of infinite time is an ideal extension of the duration we actually grasp in a concrete way. I know what the astronomer means when he says that the sun is 93,000,000 miles away, but I cannot claim to experience that distance in any concrete fashion. For an idea to be real and true it is not necessary for it to be reduced to the photograph or moving picture form. So, with reference to these ideas of the infinity and infinite divisibility of time, we hold (a) that they *are* based on the facts of direct conscious experience. These ideas, like any other ideas, are the constructs of the idealizing process. We literally "think" them; we do not swallow them in capsules. And, (b) in the next place, these ideas are true. But instead of proving that therefore time is outer and extra-mental, this proposition only proves the reverse, viz., the conclusion for which we have been contending all along, that the time fact is essentially a form of relating experience elements. In support of this latter contention we shall therefore proceed to show (1) that the idealist theory of time gives an intelligible meaning to the notion of its infinity, and (2) that the idea of infinite divisibility receives, on this hypothesis, the only explanation consistent with the fact that we have a consciousness of time at all.

(1) If time is a form of conscious synthesis, its infinity means just that, as a rule or law, it contains no provision for a stop; indeed, as a law it is contradicted or annulled by the interposition of a limit. Thus I know it to be infinite simply because the law of the series admits of no final term, not because I have actually followed it out to an infinite number of terms to see if there be an end! The series 1, ½, ¼, ⅛, ... is an infinite series, and yet, to know it as such, we need only see that the law of relating its terms admits of indefinite application. And so it is with the idea of time. If we try to conceive of time as some

ultimate, trans-experiential fact, then infinity for it could only mean absolute indetermination,—which means absolute unreality and nothingness. But if we regard it as a form of relating elements in experience, then it is just as real as those related elements are, and its infinity (in the only conceivable meaning of the term when applied to a law) is a perfectly valid inference from its actual nature as a concrete fact.

(2) And its infinite divisibility, on the view here defended, would be interpreted in a precisely analogous manner. Time *is* infinitely divisible. But this does not mean that it is infinitely divided. As known in experience it is not a sum of zero durations, nor of infinitesmal increments that are nearly zero but not quite. Nor, even, is it made up of a sum of "minimum discernible" conscious units of duration. The unit of time is always relative to the purpose in hand. I say the "present century", if it is my purpose to compare centuries, or the "present minute" if minutes are the objects of my current reasoning. The minimum discernible is the unit of conscious time *only* when my present purpose is to realize the most minute distinction of sequence that I am capable of making. But the notion of infinite divisibility, like that of infinity, is an ideal extension of the conscious fact to its ideally known mathematical limit. It is the result of positive analysis. If the possibility of temporal synthesis is before my mind, I find that I can realize it in a concrete way over but a small scope of experience, i. e., the scope of my specious present. But I can see that as a law of synthesis it is endless, and thus ideally it is infinite. Similarly, when I attempt the process of temporal analysis, I find that I can realize it in a concrete way only to a limited extent, i. e., to the minimum discernible. But, as before, the law of the process provides for no stop-and I can see ideally that it is infinite. This gives at least a real and possible meaning to the notion of infinite divisibility.

Is there any basis, then, for the premise so often set up, that only one instant can possibly exist at once? On what I have called the idealist view of time, this means simply that we cannot relate the same two events as both coexistent and sequent. Of course, no two instants of time can possibly exist "at the same time" because this simply denies that they were really two instants in the first place. Or, from a slightly different angle, it only means that once you have related two events in terms of before and after, the first is past, when considered from the standpoint of the second, and the second is future with reference to the first, etc. They are still events of consciousness and known only as such; and there is nothing in their inevitable sequence or temporal

otherness or mutual exclusiveness (which latter is all included in the simple fact of sequence) that implies that they should not both exist within the range of a single conscious present.

At the risk of repetitiousness it seems wise to insist here again that once we try to reverse the order of importance, and think of consciousness as existing in time (that is, in an absolute present) instead of thinking of the present as a determination in consciousness, we are met by the familiar difficulties: (a) the absolute present is only the thinnest abstraction from concrete life, which taken in itself leads to all the traditional logical impossibilities; and (b) if consciousness were really in time, then it could exist only in the present of that absolute time, which, true to Augustine's logic, not only could never be known as such, but telescopes itself into a durationless present, which amounts to a complete canceling of it.

We have seen that the actual psychological present, as a simple matter of empirical fact, is not a durationless point, but is "specious,"—has a real time content. We must now point out how utterly hopeless it is to try to determine or define the present on any other basis. The present facts of the outer world do not differ from past facts in any assignable feature except their concrete *presence to* consciousness. The laws that control the events of today are the same as those that were in force yesterday; the application of mathematical formulæ to the one is as direct and simple as to the other,—if, indeed, there is not a slight advantage in favor of the past; they seem equally rich in qualitative content,—the red or cold or sour of yesterday resemble indistinguishably the red and cold and sour of today; even the temporal relationships of event to event—the inevitable before-and-after—show themselves just as real and measured in the organization of yesterday as in that of today. And so with the future. The "will-be" of moments to come is just as definite, regular, dependable, clear-cut, as the "has-been" of yesterday or the "is" of today. Now, apart from all reference to consciousness, let one simply contemplate the continuous series of events of which the present moment is one, and see if there is anything about the latter that will distinguish it from the rest,—supposing for the moment that this durationless partition between past and future could be distinguishable at all. Our observer must not seek for a unique point of change, for the whole series is made of change. Perhaps, if he cannot make out the dimensionless area (!) called "present," he can at least see some

difference between future and past, and then infer that the illusive present moment lies somewhere between the two. But here again his common criteria are forbidden him. He must not say that the future is the locus of the objects of purpose, because, once more, that is to appeal to consciousness. He must draw no distinctions between memory and expectation, hope and regret, etc., since that, too, would be anthropomorphic. And it is very probable that, with his resources thus limited to a reality considered as an objective mechanical series only, he will come to the conclusion that time is an unbroken continuum, change an unbroken series, and the distinction of past, present and future a delusion of consciousness only. What a queer road to timelessness after all!

We have spoken in the foregoing of the relation of change to the present. If, now, we do not labor under the restrictions there placed upon our hypothetical observer, but leave ourselves free to come to any conclusions whatever that the facts seem to demand, we *do* find undoubtedly a strange interrelationship between change and that irreducible concrete glow we call the present. Common sense at any rate would at once insist that, however much the past, like the present, may be a kingdom of change, yet changes do not occur in the past as past. The change belonging to any given moment only really occurred when that moment was present,—when it was molten, flowing, living. To be sure change requires time and, if it must be thus spread out when it happens, it looks as if that present would have to be a "specious," not a mathematical one. But then, for immediate purposes, we have allowed ourselves recourse even to such a consideration as that, if such should seem necessary. The past is a region of change, and yet we say change is real only as present. In other words, while the past by its very definition, admits of no change, we can only describe it in terms of change. Is there not some confusion here?

There are at least two ways in which the past is at the mercy of some kind of present. (1) In the first place, as we have suggested before, the past "is" real as past. There *is* a real *past* in our universe of reality. Perhaps no one will question that. Now let us ask, what would happen to that "past" if the present should be wiped out of existence? Then we could no longer say that there is a real past because all conceivable content of the "is" would be cancelled. Of course, it would be a hard saying to insist that the past, the only past in all the world, exists only in the present,—in some sort of a present at any rate. And yet, what else can we say under the circumstances? Strangely

enough even the past threatens to confront us with the idea of Absolute presence! And now (2) the converse of the above is also true. While the past *is* real as a past, it *was* real only as a *present*! That is, to say that a given event is really a past event, is only another way of saying that it was once present. If some playful god could just cancel from its reality that image of the temporal present, it would cease completely to be real, even as past. Thus, once more, reality seems to balance itself somehow on the concreteness of the present; when that point is gone the whole structure crashes into nothingness.

If we return, now, to the question above encountered with reference to change, we may not be so much surprised that the change of which the past is built should seem to have about it such a strong suggestion of the present. While the past is a series of changes, it is equally true that change, (1) requires time in which to happen, and (2) requires that that real time should somehow be present in order for the change as real movement to be a fact. And it must also be evident by this time that the specious present of consciousness answers exactly to this seemingly paradoxical description. Suppose we are willing to grant that the present is actually this function of consciousness,—not that the real present somehow just "is," while the specious present of consciousness sticks out, so to speak, at both ends and surreptitiously displays as a part of the present what is really a portion of the past and of the future, but that, on the contrary, the enduring, living present of consciousness is indefinitely the more real of the two,—the mathematical, instantaneous present of science being only a limiting concept in a process of abstraction which could no more be real than a plane without thickness could be. Then (1) in the first place, we make room for real change with its seemingly contradictory presuppositions of presence and duration. And again, (2) with the real present once shaken loose from that harrassing dilemma of the mathematical point, we can offer it without embarrassment as a wider, safer basis on which, as we saw above, even the past and the future must somehow stand. It may indeed be that the specious present of our own consciousness, however concrete and living it may be, is still too narrow a foundation to support the teeming infinities of time that stretch out from us in both directions. It is conceivable, even, that an all-embracing Absolute present should, in the last analysis, be required. But the essential point here is that the present is not a point or a plane, but a real, spread-out field of consciousness, even in our own limited, finite world. The other question need not immediately concern us. And finally (3) while the vanishing mathematical

present utterly cancels the real intelligible present of consciousness, the larger present, assumed as fundamental, does allow ample ground for the exact present of analytical mechanics, by regarding it simply as the limit of a converging series, the exact content of its final term being, while scientifically useful, as far from the distinguishable content of experience as is the exact value of Π.

As a simple matter of "checking up" our conclusions down to this point, one further observation will be useful. The idea of change is indissolubly bound up with the idea of the present, and the present turns out to have its roots in consciousness. In such a case it is but natural that there should be the close relationship between change and consciousness that modern psychology everywhere shows to be the fact. Wherever there is consciousness there must be change in the object of such consciousness. A changeless object of consciousness is almost a contradiction in terms. And if the above-formulated relationships are fundamental we might add as a corollary to this that where there is consciousness, there is also a real present, although it needs no expert syllogizing to discover that! But the end is not yet. If our other conclusions are correct, we may read both of these deductions in their converse form and they will still hold good: (1) Wherever there is real change there is consciousness,—since change requires the specious present, and (2) wherever there is a present there is consciousness,—since a present without consciousness turns out to be only a mathematical abstraction!

And yet, to say that time is thus a function of intelligent experience, is a conclusion intensely offensive to some people. As an example of such antipathy we may refer to Professor Ladd who in most respects may be classed as an idealist, but who insists upon regarding time in the most realistic way. He courteously dismisses the idealistic view of time as an "abject imbecility."[43] His chief appeal in so doing is to "common sense," and his formulation of the view of common sense is as follows: "Space and time are thus regarded in the light of 'universal media.' Things, with all that they really are and all that belongs to them, are 'in' these media."[44] And the extent to which he agrees with this common sense notion may be gathered from these statements of his own view. "We begin by accepting the confession of everybody that,

[43] *Theory of Reality*, p. 189.
[44] *Ibid.*, p. 179.

somehow, space and time are like 'media' for the orderly arrangement of existences, of changes, and of relations."[45] And again that "the continuance of time—as past, present, and future—must be regarded as the medium in which things exist."[46] Thus he takes common sense at its face value. Of course, it *may* be entirely right. Indeed, it is in all probability just as accurate and final an authority on this question as on any other of a highly technical nature. But along with this authority he suggests an argument. In this he aims to show that without some kind of absolute time there is no warrant that A's present should coincide with B's, etc., and that "thus the purely subjective view of time consciousness destroys the possibility of society, of history, of the intercourse and development of the race." . . . . . ![47]

Events, we are told, must have absolute dates. The event itself must have "something to say about its own proper location" in time. Certainly, but the idealistic conclusion does not mean that the temporal relations in experience are arbitary, any more than it implies such a conclusion in the case of any other realtions,—most of which Professor Ladd is perfectly willing to regard as ideal. And even if such were the actual alternative, it is not made evident how an extraneous tertium quid would help matters any.

But there is a point of view from which his illustration may serve to introduce certain interesting possibilities of speculation. How do we know that our several "presents" coincide? Even if it be necessary to conclude that we do not know for sure, that conclusion would be no argument for Professor Ladd's view of an objective and absolute time,—at least not until he explains how such a time could ever be known in any other way than as an element in conscious experience; in any other case the puzzle of relativity would remain and the external Time would be only an additional and useless burden. As he has not done this, we shall discuss the suggested problem in its bearing on the view, herein-set-forth, omitting, for the most part, its relation to his realism.

In the first place, we must confess to serious misgivings as to whether the question has any assignable meaning. How do you and I know that our conscious time series coincide? Now, if "coincide" can in this case have any other than a temporal significance itself, then the question has meaning. Does the question mean to ask whether your present and mine come *at the same time*? If so it is purely tautologous. Of

[45] *Theory of Reality*, p. 181.
[46] *Ibid.*, p. 187.
[47] *Ibid.*, p. 190.

course, they come at the same time, viz., the present! One asks, "Is your present and mine necessarily identical?" Again we reply, Does the question mean to ask whether a given event will be present for you *at the same time* that it is present for me? If so, then again the question is self-contradictory and absurd. But I am not sure that the question necessarily implies a temporal basis of reckoning. I shall assume that it is possible to distinguish a factual or logical coincidence from a temporal one, and discuss the question on that basis. Of course, if the distinction I refer to is impossible, then the question is absurd,—and so is the reply! But for the present I shall take the chances!

What reason have we to think that the present in different subjects should coincide? One's answer to that question would depend very largely upon the view that he held as to the ultimate nature of consciousness. We may consider first the answer that one would give who embraced the individualistic notion of consciousness. And this notion, by the way, is the one from which Professor Ladd's criticism comes: he speaks of events as "being regarded from points of view which are wholly subjective and *so* disparate!"[48] Of course, if personal consciousness are by their very nature "disparate," they will be so with regard to time relations,—as also with regard to all other relations that one could mention. But even on the individualistic view of consciousness this does not necessarily follow at all. He does not think of such a thing in reference to any of the other phases of experience that he himself regards as being relative to conscious life for their only reality. But he, like the other thinkers of his school, considers that finite experiences are coördinated through their common dependence on the Worldground or Absolute, and it looks as if time relations as well as any others might be so coördinated.

But if one holds that consciousness is really, in its very existence and structure, a social continuum, then this problem is perhaps more easily disposed of. The world of experience, according to this view, acts to a certain extent in its entirety, and the present for my consciousness would naturally coincide with the present determined by the whole of which I am a part. However, there is one difficulty even here. I may be a part of a social consciousness, but it is certain that this fact is compatible with a large amount of individual difference on my part. *Some* difference even seems necessary to make me a separate person at all. Now, if my experience can differ in some ways from the experience

[48] *Theory of Reality*, p. 189.

of others in my group, I see no a priori reason why it could not differ in its time forms as well as in the form of other relations. So, while the idea of a social consciousness perhaps makes coincident time relations more probable, it does not entirely settle the matter.

We have said "no reason why not," and "looks as if," etc. May we not say that we *know* that the time relations of all our consciousness are identical? I do not see how one could make good such an assertion. One is reminded of Mr. Bradley's interesting speculations on this subject.[49] Not only might the same facts be related in reverse order by different types of consciousness, but he even suggests a kind of magic square arrangement, on which time relations could run at all conceivable angles. The only reason I know of for not thinking that such perplexing disparity is real is that there is no assignable reason for thinking that it is so. It seems to me in every respect abstractly possible.

To sum up: The question is raised whether, if time be only a way of organizing experience and not an ontological entity or media, the time series of different persons might not be quite disparate. We answer that it might indeed be so. It is abstractly possible. But it cannot be accepted as an objection to the present view for the simple reason that it seems to be "abstractly possible" on any view of consciousness or any view of time whatever, and a consideration that applies to any view cannot be the basis of discrimination against one of them.

ARE TIME RELATIONS UNIVERSAL AND NECESSARY?

We have seen reason for thinking that time is, at least for us and our experience, essentially a form of the process of organizing experience. This does not mean that a congeries of "immutable" things are seized by consciousness and related in a temporal way, which relation at the same time tells us nothing as to the nature of the real objects related. This would be to get back to the obsolete dinge-an-sich of Kant to which no mental functions could possibly apply. And so far as that is concerned, the notion of immutability is, just as much as the correlative one of mutability, a temporal affair and has no meaning whatever apart from temporal relations. The facts of our experience that we know as successive are really, not merely apparently, so. Their temporal rela-

[49] *Appearance and Reality*, p. 216.

tions are as real as any other of their relations, and are actual features of their cosmic existence. But still the temporal relations are relations, and can be real only when the relating is somehow done; and can be known, we have held, only when this relating is a constituent factor in the activity of experience. In this sense, then, time is assumed to be a "form of organizing experience."

A complete statement of this notion, however, necessitates the answering of two important questions that will immediately suggest themselves. In the first place, Is this form of relating a universal one in experience? and in the second place, Is it a necessary form of all possible experience? These we shall take up in order.

When we say "universal," do we mean that one is always conscious of the before-after relations in experience? If the proposition can be stated in so simple a form as that, then the answer seems equally simple and easy,—The time relation is not always present in consciousness. Whether the feeling of satisfaction at the thought of having a thousand dollars in the bank is or is not a state of mind in which time considerations are absent, still, in the transport of artistic appreciation, in the moment of contemplative absorption, in the spell of sudden insight, we see states in which the sense of time is practically submerged; some such experiences seem to possess other aspects of such vital and intrinsic worth that the mind is blinded to their temporal importance or bearing. In these cases, if the temporal relations are there, they are at least not consciously there; they must lie in some entirely different stratum of reality than the one that is then lit up by the light of consciousness.

Indeed if, as Kant insisted, time is the "formal a priori condition of all phenomena without exception,"[50] we seem bound to modify the statement in at least one very important respect. Not only do we have, as just pointed out, many common experiences in which the relation is not consciously or explicitly present, but modern psychology forces us to deny that it could be in the same way and to the same degree an element in every experience; if it were it would be impossible for us ever to know it at all. In such a case it would, in a very short while, get to be a "time-subconsciousness" and finally a "time-unconsciousness,"—if one may pardon for the moment the ascription of ideal content known as such to an unconscious element in experience. In other words, in order to come to recognize the presence of the time element at all, it must vary its rôle to some extent, and moreover, it will be known just to the extent

[50] *Critique of Pure Reason* (Müller Tr.), p. 27.

to which it does so. It has long been a truism in psychology that an absolutely invariable phenomenon would be beyond the reach of conscious discrimination. We must therefore insist that, if indeed it be present in every experience, it is at least not equally present in every state, and this seems to me to be giving up the whole contention in principle in that, in such an admission, it is virtually conceded that its reality in experience is a function of the relating process which varies with the nature of the material related and the sort of purpose in hand.

It is simply a fact that experience, when considered from the standpoint of its purposiveness, may always be related in temporal form. Now if anyone chooses to insist that that standpoint *may* always be taken with reference to any experience whatever, there is no apparent reason for calling the statement in question,—except the fact that it is wholly gratuitous. It amounts to saying that there is a time-consciousness "potential" in every experience. But the fact seems to remain that the potentiality is not always realized,—that, so to speak, the time aspect is not invariably exposed when, by the conscious process of organizing experience, the insulation of settled, mechanical, subconscious tendency is burned through.

Having granted that it may always be a "potential" aspect, at least, of all conscious states (and there are always difficulties lurking in that word "potential") shall we say with Kant that it is a foregone necessity that such should be the case? In other words, is it inconceivable that there should be such a thing as experience without this aspect? I do not think that it is, and for the following reasons:

(1) The modern philosopher no longer tries to deduce the categories (time being one) from the something-nothing, being-nonbeing premise of the Hegelian dialectic. At most, one could only point out that time is a very elemental factor in experience as it is for us,—he could not show it to be in any sense a logical necessity, flowing from the very nature of reason itself. But if such be the case, there is another side to the question. Experience seems to be compatible with a vast variety of change and difference, and it is quite impossible to say that the nonreality of the time form would completely over-step the line of cosmic alternative and render experience utterly impossible and the very conception of it absurd.

(2) Kant calls it "a priori." Is this not true? Indeed, there is a sense in which this conclusion seems certain. The English sensationalists failed hopelessly in their attempt to shake up "mere sensations" in a hat and draw thereout a full-fledged time consciousness. Time,

whatever else it be, is not an aggregate of mere sensations of any sort nor of assorted sensations of all sorts. It is a form of active synthesis of the elements of experience into intelligible wholes. In this sense it is a priori; and this is one great meaning that Kant gave to that word. But it is not a priori in another sense in which Kant himself seems at times to use the word. The proposition that experience should be temporal in character is not one that overwhelms the mind with an irresistably axiomatic force, nor can it be deduced from any such axioms. In this sense it seems to be as contingent as is the space form in our consciousness of the world.

(3) At this point the proposition may come back in a slightly altered form. Kant urges one to try to banish the time relation from his "intuition" and just see if he can do it! The experimenter will find, we are told, that whereas he can think away any and all objects from space, he cannot think space itself away; and, in like manner, whereas the mind can do away with any particular event, or all particular events, still he cannot think away the fact of duration itself;—i. e., that while no concrete event seems to be essential to the reality of the world and the validity of knowledge, the fact of time itself *is* such an absolute prerequisite. As he says, "Time is a necessary idea which is presupposed in all perceptions. We cannot be conscious of phenomena if time is taken away, although we can quite readily suppose phenomena to be absent from time. Time is, therefore, given a priori."[51] And again, "While, therefore, phenomena may be supposed to vanish completely out of time, time itself, as the universal condition of their possibility, cannot be supposed away."[52]

To this argument several replies may be made:

(1) It is somewhat of a puzzle to see what duration would be like in which nothing endured. If we are, as a sheer matter of fact, still conscious of duration after we have tried to clear consciousness of all sense of things and events and change, is it not more legitimate to conclude that we have not really washed the slate clean of concrete facts, than to insist that we have time left as an omnipresent, though empty, reality? According to Kant's own analysis, space and time are only "forms" of intuition, and both form and "matter" are organically necessary to any consciousness whatever. To intuite empty time when all temporal facts have been unconditionally dismissed from consciousness is, if the critical conception of knowledge has any truth in it at all,

[51] *Critique of Pure Reason* (Müller Tr.), p. 24.
[52] *Ibid.*, p. 25.

a contradiction in terms. Indeed one is tempted to quote Kant's own aphorism that while matter without form is blind, form without matter is empty. The only objection one might have to quoting it in this connection is that some reader might not notice the pun on the word "empty" as used in these different expressions. Of course, the very point we are trying to make is that it is impossible to be conscious of empty time (on the Kantian hypothesis at least), while the quotation seems to say that form without content *is* empty! However, I suppose it is evident enough that the word is used once in a logical, and once in a purely descriptive way. In other words, the judgment "Empty time exists and stands in relation to my consciousness at least to the extent that I know its existence," is by no means empty in the sense of being without logical content. And according to the Kritik, it is just this judgment that would be impossible. Kant himself, in another place, takes approximately the same position. He says: "There is no way of proving from experience that there is empty space or empty time. For, in the first place, the complete absence of reality from a perception of sense can never be observed; and, in the second place, the absence of all reality can never be inferred from any variation in the degree of reality of a phenomenon, nor ought it ever to be brought forward in explanation of that variation."[53] In other words, the knowing consciousness could not "apply" the time form without something to apply it to,—i. e., without some concrete content. But it must be evident that this consideration, so well stated by Kant himself, completely undermines his former attempt to prove that time is a necessary and universal form of experience, since the argument there is, "We cannot be conscious of phenomena if time is taken away, although we can quite readily suppose phenomona to be absent from time." The fact is that duration in which nothing endures, or time in which there are no real occurrences, looks suspiciously like an orbit in which there is no planet or a forest deprived of its trees.

Of course, the discussion here applies only to Kant's attempted proof that time is a necessary and universal form of experience, and appeals to his distinction of the form and content of experience, the truth of which distinction we are not aiming to discuss. The only question here raised is the one of consistency within his own arguments. And we hold that if it is possible to think all facts and events away, but impossible to get away from the consciousness of time itself (even

[53] *Critique of Pure Reason* (Müller Tr.), p. 141.

as so emptied), then while this might show time to be a necessary phase of experience, it would at the same time invalidate Kant's own more general conclusions.

(2) To test whether or not time is a necessary form of experience, we must not fix up for ourselves an experiment that is itself a rational contradiction and then, failing to make any headway at it, conclude that time is therefore an inevitable relation in the world. Professor Fullerton[54] has long ago pointed out that most people, to test the inevitableness of the space form, try to imagine what is in the space beyond the limits of space, or what would exist in the place of space if it were away,—when "place" and "away" and "limits" and "beyond", etc., are all spatial terms and presuppose the reality of space for their only conceivable application. Similarly, in order to satisfy ourselves that time is a necessary form of all intuition, it will hardly do simply to try to imagine what an interval would be like in which there was no time, when all the terms of the problem are thus temporal in meaning and when it is obviously a foregone conclusion that we could find no nontemporality there.

(3) And finally there is another reason why so simple an operation as merely thinking time away offers little hope of demonstrating anything. The trouble is that in such an effort attention stands in its own light. We try to abstract the time element entirely from experience and then see what is left, and it is evident that such a procedure merely makes the temporal aspect the chief thing to be dealt with rather than an omitted consideration. It is something like trying to press the pain out of a boil; the pressure only heightens its emphatic presence. It is a familiar fact that the only way to drive a given element from consciousness is to center attention really, not merely ostensibly, on something else. As a matter of fact, the more we try to make the-world-minus-its-time-aspect the object of consciousness, the more sure we are to find that the time consideration that is thus made an integral part of our object has all the earmarks of the time relation when the latter is applied to any other object in consciousness. In other words, the experiment might succeed, if at all, only when the time relation was wholly submerged by other interests,—that is, in a state of mind absolutely antipodal to that of the suggested experiment. Indeed, if one be fond of paradox, he may put it thus: that the less one tries the experiment the more probable is his success; or, the more the present aim is unrelated to, and disparate with, the object and aim of the experiment, the more liable is the object of the latter to be realized.

[54] *Introduction to Philosophy*, p. 76.

We are not, therefore, surprised that Kant failed to think time away as easily as to neglect this or that concrete event in the temporal series. And we suspect that the "time" he still found on his hands after he had "supposed phenomena to be absent from time", was really a very complex stream of events, even though these events were only respiratory movements, heart beats, artery pulse in ears, neck, forehead, etc., and all the other trooping shadows of cutaneous and organic sensation that flit across the stage of consciousness in the dim light of quiet contemplation, but which ordinarily elude our definite grasp. It is not so true to say that the time form is inevitable, as that one can always find events if he is conscious enough to look for them, or, which is the same thing, that experience is always relatable in a temporal way when we choose to view it in that aspect.

We conclude (1) that there is no available proof that time is either universal or necessary as a form of experience. (2) That it is safe to hold that it is not universal in the sense of being equally present in every experience for (a) there seem to be some experiences in which it is nearly, if not quite, absent, and (b) it could not be known as an element in experience if it were equally present in every increment of that experience. And (3) that, while it is impossible to prove that it is not at least implicitly or potentially present in all experience, still it is equally impossible to prove that it is necessarily there, and the burden of proof would seem to lie with the affirmative.

Therefore, although time and change, like space and extension, are very real in experience, we hold that their presence is as contingent as it is real. Can we, then, imagine an experience the factors of which would be related in ways wholly different in form from space and time? No, since, by hypothesis, that is a form of conscious construction that is as yet entirely foreign to us. If we are unable to relate our direct concrete experience in such hypothetical ways, it stands to reason that, under the same limitations, we would not be able to re-present such relations to consciousness in terms of images instead. But, in saying that space and time are contingent, we mean simply that there is no a priori reason for thinking that these are the only possible laws in terms of which experience can ever be serially organized. And the negative conceivability of such now unknown elaboration of experience material is in no way precluded by our mere inability to picture such a state of affairs in concrete terms. With the growing complexity of experience, and our increasing grasp on it and control of it, some very unpredictable things might come to pass.

TWO IMPORTANT THEORIES OF TIME

Having indicated in the foregoing our general attitude toward the time problem, we shall now turn to a more interesting task,—that of presenting in outline the views of time held by two of the great representative philosophers of the present, Professors Eucken and Bergson. These two are chosen, not only because of their intrinsic importance, but also because they seem to stand at the opposite poles of the discussion. While one regards the temporal as an inferior aspect of reality, the other makes "real" time the deepest fact in existence. Our chief interest, therefore, is in the comparison of the two views, rather than primarily in the content of either.

For Professor Eucken the problem of philosophy is at bottom a moral and religious one. The major premise of all his arguments is this: "Human life has a significance, an inner worth and value of its own." Any world view, any way of thinking, that does not make room for such real value, stands self-condemned. To be sure, it is not on this basis that metaphysical schools are wont to debate their views, but it is this reference to life, rather than to logic, that will ultimately decide between them. A naturalism, for instance, may be as logically consistent as a medieval discussion of angels (and the Scholastics knew how to be logically consistent!) but if it construes the striving, the sorrows, the loves, the ideals of humanity as sheer swirls of atoms or vortices, or as simply highly complicated organic chemistry, then that system of thought with all its logical sparkle is doomed, sooner or later, to a place in the rubbish heap with the other. If our thought world is too small and cramped for the soul's needs, then the living soul will surely break it down.[55] And conversely, if life, in order to reach its highest, fullest expression, is forced to break the bonds of any system of thinking whatever, then that is proof absolute that that system was untrue. That is, in a way his test of truth is the pragmatic test, though his definition of truth, as we shall see later, is a thoroughly absolutist one.[56] And this test he applies fearlessly to the philosophies of the schools, to the creeds and concepts of the churches, to the ideals of whole culture movements. Each is brought before the bar and asked, "If given complete

[55] *Hauptprobleme der Religionsphilosophie der Gegenwart*, pp. 58, 69, etc.
[56] *Geistige Strömungen der Gegenwart*, p. 49.

control, will you expand or contract the meaning of life, ennoble or cheapen it?" Human life feels the throb of spiritual power; human philosophy must give it room!

That such considerations actually do decide the fate of philosophical conceptions on the field of history no one, probably, will feel disposed to doubt. Professor Eucken says, not merely that they do, but that they should and must. If one refuses to accept this major premise, then Professor Eucken's work is for him a stumbling-block only; to one who does accept it, his work may be a revelation. His general conclusion reached by following the method here indicated is that every detail in the world's history receives its value, as well as its very being, from the unseen world of the "Geistesleben" which includes and encompasses the whole series in a profounder unity,—that, through its nontemporal presence to all the parts, organizes the otherwise hopeless multiplicity of temporal succession into a living Whole. It is this Presence in the very heart of man that makes his life more than a mere succession of events,—that raises it everlastingly above the mere rattle of mechanical change; this, too, is the transcendent Source and final Measure of the Good, the Beautiful, and the True. Our present interest in this conception is, of course, not so much in the existence of the "Geistesleben," as in its nontemporal character, although it must be added that this characteristic is the preëminent one in the teaching of Professor Eucken himself. We shall proceed to give as briefly as possible his reasons for thinking that our consciousness, however much it may enter into the series of temporal events, still has its roots in a timeless world of Life.

First and most important of all, is the repeated and reiterated contention that the ultimately temporal character of reality would be utterly inconsistent with the integrity of moral[57] life. In order, in other words, for life to have moral meaning, it must be lifted above the level of mere events; it must link itself to a world that is higher than mere men,—a world that is in some way a living Whole. While both may do good, an act of deliberate self-sacrifice differs from a thunder shower in some high and ultimate way. Both, as temporal events, vanish with the moments in which they occur, and those moments, in the one case as

[57] *Geistige Strömungen der Gegenwart*, pp. 322-403, especially 322-340; *Der Sinn und Wert des Lebens*, entire.

much as in the other, are infinitely divisible and tend to vanish completely when we search for the fraction that has a present, real existence; both, too, are, in their occurrence, parts of the web of mechanical causation and change. Yet there is another side to the question. The one has a meaning that does not vanish with the moment; it has a content that, somehow, is not infinitely divisible but is, rather, organized as the expression of a single purpose; it is bound in the chain of causation but its essential ground was an "ought" that cannot be regarded as a link in such a chain. In other words, the one was moral, the other was not.

Of course, it may be replied, nobody denies that a moral fact has something about it that distinguishes it from facts that are not; so has any general class of things to which we are able to apply any distinguishing name. But it is not, on that account, involved necessarily in any puzzles of timelessness. Indeed, so far as its purposiveness is concerned, that would even seem to stamp it as doubly temporal, since the very essence of purpose is the "forward look"—a temporal affair surely, and a relation, too, that all temporal events do not obviously possess.

As opposed to this, however, it is Professor Eucken's specific point that the very characteristics that make an event moral require that it have a part in a time-transcending whole. Of course, a being, even to be perfectly moral, would not pull away completely from the stream of time and simply rest in the Eternal Quiet. Time is not a contaminating evil that detracts from moral value; on the contrary, it is the field where moral acts, like any others, must find their place if they are to be real. But they must not stop with that. A fact that completely loses itself in the temporal flow *is* gone when those particular moments of time are gone and its relation to succeeding moments is at best only that of cause and effect, precisely like that of the thunder storm. And furthermore, the moments of conscious events, just as much as any other moments, *are* as such different, mutually exclusive. Temporal things are literally, as James says, "strung along"; the time relationship of before-and-after is itself the disintegrating element that makes an infinite multiplicity out of any content whatsoever that it may have.

Indeed the case here is exactly similar to the spatial difficulty referred to above. No one in the throes of life's crises can possibly convince himself that all that is going on is a wonderfully complex performance of countless separate spatial atoms. His feeling of unity, of responsibility, of self, of personality resists all argument; he knows that somehow an individual destiny is working itself out in his immediate neighborhood. It may be ever so closely associated with the atoms but it is

not, cannot be, identical with them. Nor, indeed, can it be a spatial something that envelopes them. Space is divisible and geometrical, but his consciousness of present strain and choice is not something that has shape or size, or can be cut into fractions spatially. And just as consciousness will not submit to being stretched out spatially over the mutual externality of spatial points, so it resists all efforts to being "strung out" in time. The conscious self has a unity that atoms in spatial arrangement cannot have and, just as surely, it has an identity that successive moments can never possess. Nor is the self a sort of temporal continuity,—a string on which the moments of time may be held together; for, however indiscernibly small may be the intervals, they are still intervals. We can never hope to get them so short that they would cease to be quantitative,—i. e., divisible. From every side the "nacheinander" of the parts of time turns out to be just as destructive as the "nebeneinander" of the parts of space, to any reality of a unitary or identical nature supposed to exist in it. And if a moral act, or a moral life, *has* inner organization and coherence, then this very character, which the thunder storm does not have, is something completely counter to the hopeless diversity of the temporal process,—something that, in its own might, defies the pulverizing wheels of time. "Nur so lange ist für den Einzelnen das Dasein eine rastlose Flucht von Erscheinungen, als er eines selbständigen Innenlebens entbehrt, nicht irgendwie zu einem Ganzen persönlichen Seins und geistiger Individualität gelangt."[58]

Similarly with regard to the "ought" that is the ground of moral conduct. This fact is in a sense a part of the cause of the moral act,—"cause" in the sense that few if any (Kant says none at all) moral acts would exist if it did not exist. But it is not a cause in the sense of being a temporal antecedent. Indeed, if it were it could never characterize the moral act as such, but only its antecedents. It would be a strange sort of duty that always dropped out of existence just before its fulfillment And yet that is just what the antecedents of an event do. No, "ought" is a relationship to the whole of life,—a whole that cannot squeeze itself into the narrowness of a passing moment, though it may give that moment its inner character. Indeed, it might be taken as an interesting commentary on this view of duty that the English word "ought" is tenseless.

While we still center our attention on the individual rather than upon history as a whole, we may cite, as another reason for asserting the existence of this time-transcending Spirit, the fact of knowledge.

[58] *Geist. Ström.*, p. 270.

An act of knowledge, like a moral purpose, is inconceivable under any conditions that do not permit of inner organization and unity. The subject-object relation, for instance, cannot be a simple spatial otherness. To be sure, the object of our perception may be a spatial object, but its rôle as object is something completely over and above the fact that it is spatially before our eyes. To know it we somehow or other make it our own; it becomes a part of the immediate content of consciousness,—which would be quite impossible if its relation to us were determined by, or constituted from, the thorough-going mutual externality of the parts of space. But if there is in and above the spatial screen an all-containing principle to which the objects of the world are immediately present, then the presence of that principle in the consciousness of the knower makes it possible that the separations and oppositions involved in spatial otherness should be overcome.[59]

And now, in a precisely similar sense, is a transcendence of some sort necessary in order to nullify the disintegrating character of succession. The moments of a judging act are not mutually distinct links in a causal chain; the predicate is not the result of the subject, nor the subject the mere temporal antecedent of the predicate. In other words, the quantitative, infinitely divisible character of time cuts the knowledge act into impossible fractions just as surely as would the dominance in it of the fact of extension,—except that the time relationship, as it were, cuts it through another dimension, or parallel to a different plane. Either type of multiplicity would be disastrous to knowledge were not the life of the soul superior to the phantasmagoria of time. "Das Seelenleben in ein Nebeneinander einzelner Bewusstseinsvorgänge auflösen, das heisst allen innern Zusammenhang preisgeben und damit auch die Möglichkeit einer Wissenshaft von Grund aus zerstören."[60]

And this relation to knowledge is perhaps seen best of all in the character of truth. Professor Eucken is well aware that the nature of truth is not an undebatable postulate in these days of philosophical renovation. But leaving to one side, so far as possible, the question as to whether or not truth is instrumental (On this point he says in a somewhat ambiguous way "Die Wahrheit aber ist nicht ein blosses Mittel zur Erhöhung dieses Lebens, sondern sie gehört zu seinem Wesen.")[61] it is perhaps possible for all to agree at least in this, that the truth fact is not a sort of coincident whirr that accompanies states of conscious-

[59] *Geist. Ström.*, pp. 12, 35, etc.
[60] *Geist. Ström.*, p. 120.
[61] *Ibid.*, p. 35.

ness now and then, having, like the latter, duration and mutability. No, perhaps that is overstepping somewhat the limits of what is commonly agreed upon but to our author such a statement is of self-evident truth. To ask whether a judgment is true or false is not to inquire concerning its temporal relationships; it is not to ask what sort of events preceded or followed or accompanied it, although these may serve as evidence as to whether the truth is there. In fact, even the most ardent exponents of such a view as we are now discussing make the truth as little as possible a direct time function. It is a utility function primarily and temporal only secondarily, through the fact that the use of the new synthesis whose truth is in question requires time. I mean that, to find the truth of a judgment, even Mr. Schiller would presumably not ask at exactly what o'clock the thought occurred, or how many minutes it endured, although he would say that if it were *never* drafted into active service it would have no relationship to truth or falsity either one. But unless one be singularly free from established systematic prejudices, it must seem to him that the kaleidoscopic shifting of scenes, the momentary flashing into being and dying out again of events in the narrow field of the present, furnishes no adequate ground for the fixing of truth. In the opinion of our author, the bewildering shuffle of this radical relativism can only be overcome through an appeal to a time-spanning World of Spirit whose structure is not shaken by the vicissitudes of time. While he holds, to be sure, that truth is not a passive intellectual possession, but rather, for us, an achievement that means much driving effort and perhaps even suffering, yet the truth is not, cannot be, constituted by such struggle.[62] Indeed, on the contrary, there may be vast ranges of truth that have never yet found expression in the temporal field of "warring elements," and yet truth, when we do possess it, is just the presence of this ultimate self-equal Life in the striving, inner souls of men.[63] Truth does not come into being through the simple formulating of it any more than the objects revealed by the sweep of a searchlight are created by the simple shining of its rays. The unseen world of the Geistesleben constitutes just this solid ground of truth; it is this that forms the essence of every real fact of knowledge; it is this that occasionally strikes fire in the clashing conflicts of human conviction, and lights the way of progress.[64]

[62] *Hauptprobleme*, p. 45.
[63] *Geist. Ström.*, p. 122.
[64] *Hauptprobleme*, p. 31.

If, now, the foregoing should seem to display a pronounced leaning toward the conservatist, absolutist conception, the next point that we have to insist upon may have a slightly different bearing. While on the one hand human struggles do not make the truth, yet on the other hand truth always comes into human affairs in the concrete, flesh-and-blood form of living activity, never in the dusty abstractions of the closet thinker. Indeed almost any number of quotations might be given to show how little patience he has with the thin-section truth of the syllogism as compared with the heavy, three-dimensional truth of a moving conviction or a ruling conception in history. Where work is being done, where real value and progress are being achieved, there the truth in its final sense is present. Indeed, he has been called a "voluntarist" because of his assistance on struggle, achievement. And he is quite willing to countenance that name, if only it be thoroughly understood, that the timeless energy of the Geistesleben is altogether higher, in its being, than the simple voluntary activity of men. He is the first, not merely to grant, but to insist, that the effort to construe the universe as a kingdom of Reason is a hopeless failure—we forget "dass Wissen nun und nimmer Leben zu ersetzen vermag, dass wir bei jener Wendungstatt eines vollen und wahrhaftigen Lebens nur ein Halb— und Scheinleben finden."[65] That sort of a syllogistic, mathematical world is too airy to support the leaden currents of real existence; no manipulation of theorems and corollaries could ever produce the intensities of real life. The transcendent Reality is one of power as well as meaning, of activity as well as value; and the presence of it in any great amount in the consciousness of a man is more a trophy, a hard-earned acquisition than a passive reflection of Platonic order. And it must be admitted that, while a static, Spinoza-like realm of pure logical truth is easier to harmonize with the idea of timelessness than is a dynamic, active Unity of Spirit, the latter is indefinitely more true to the apparent facts. To this conception we must return when discussing the presuppositions of history; in this connection it may be sufficient simply to have pointed out the way in which this time-enveloping Geistesleben comes into the life of men.

One other point, finally, needs to be emphasized before we turn definitely to the wider field of history. The "present" in human consciousness is, afortiori, not the mathematical present of mechanistic views. On the contrary, the present is essentially a possession of consciousness; the amount of its content, the breadth of its view, the degree

[65] *Hauptprobleme*, p. 58.

of command that it has over the flow of time and change,—all that is determined purely by the strength of that consciousness itself in its grip on the unseen world. This, we are bound to think, is a crucial point in its relation to the timelessness of the Geistesleben in Professor Eucken's theory. One's conception of the present, what it means and what determines it, settles for good and all one's metaphysic of the outer world. Is it possible to define the present, to distinguish it from future and past, without reference to consciousness?[66] We have tried above to show the futility of such an attempt. The mechanical, mathematical present, the moment we go to examine it, shrivels up into a plane or point that, of course, has no duration and so is not time at all. Consciousness, even if it could be thought of as existing in such a shadowy place, could certainly not, under those circumstances, know change since no change can occur in a single point of time, and it certainly could not know its own identity because (1) the other states of consciousness with which the present must identify itself could, on such a hypothesis, not exist at all,—that is, they would belong only with the vanished moments of the past, and (2) a consciousness of identity implies a knowledge of change, and that in this case we have found to be impossible. And if, accordingly, we retreat to the other alternative and put the present within the scope and grasp of consciousness as a function of the latter, we have practically the view discussed at greater length in another section of this paper. Indeed we need only to state our own view in other terms to say with Professor Eucken that, while the intrinsic character of time is the complete mutual externality of all its parts, yet the absolute presupposition of the living experience of the world series and for that matter of time itself, is that there should also be a deeper principle of union,—that this infinite manifoldness and otherness should somehow be sunk in an embracing Life that is not marked off into an infinite multiplicity. And if so, then the "present" of this living experience is not "ein blosser Punkt" but rather a time-transcending span. "Eine geistige Gegenwart fällt uns nicht zu, sie will von uns selbst gebildet sein, auch ist sie kein blosser Augenblick, sondern eine Befestigung gegenüber dem Augenblick, ein Leben geistiger Art."[67] To the degree to which a man is raised above the lifeless and perhaps the animal plane of simple succession, just to that extent does he become an embodiment of the supersensible Geistesleben.

[66] *Geist. Ström.*, p. 270 et al.

[67] *Geist. Ström.*, p. 264. Cf. also *Hauptprobleme*, pp. 57, 67, etc.

It is above all as a philosophy of history[68] that the work of Professor Eucken will live. Not only is the inner understanding of the movement of history of commanding aim of his work as a whole, but the very arguments on which he bases his view of the world are, in the great majority of cases, based upon the facts of historical experience. Especially is this true in the case of his view of time, since history is simply the human phase of the time world taken in the large. And what is true of history as a whole must reveal correspondingly the character of the individual's reality who is, of course, only a fraction of that larger whole. We shall therefore go at once to the favorite field of our distinguished author and ask with him what light the experience of history can throw on our problem of the nature of time.

Here once more the foremost consideration is the moral one. Can the work of the world go on if the moral life is without an anchor? Will men strive and sacrifice just to hallow and sanctify moments that, the instant they are real, vanish into a nothingness that is "too dark for shadows and too empty for dreams?" Will they stand in awe of moral laws whose only assignable sanction is that of a contingent, passing custom? Will they struggle and fight to climb higher, if they know they are on a ladder that dissolves into nothing at both ends and leads to absolutely nothing except more climbing? And on the contrary, does it not redeem and glorify moral effort for one to feel that in the very heat of the conflict,—yes, even by means of it, he is coming nearer to the heart of the eternal? These are not Professor Eucken's words but they embody his standpoint. It is evident that we have discussed the same point before, only then it was with particular reference to the individual. In general the moral issue turns upon the point of transitoriness and absolute relativity as opposed to the abiding foundation of the timeless Geistesleben that, in his system of thought, is superior to all the ravages of change. This, of course, is absolutely opposed to the Pragmatist's appeal for the reality of time and change, and oddly enough both sides make their plea on the basis of the urgent demands of the moral life! If there is an Absolute, say the Pragmatists, then the moral life becomes a farce; it accomplishes nothing absolutely new or different; there is no real movement in it at all. If there is no ultimate Whole that transcends time, says Professor Eucken, then moral effort becomes futile and absurd since it does not get anywhere; it has no real end or goal to attain; it is a mere fighting of shadows; it is a meaningless, treadmill sort of

[68] Cf. Article *Philosophie der Geschichte* in *Kultur der Gegenwart*, Vol. on Sys. Phil.

work that only leads to more—always more!—of the same thing! Although, so far as I know, Professor Eucken nowhere discusses this phase of the Pragmatist contention, the issue on both sides is so clearly drawn, even in mutual isolation, that a comparison of the two types of thought could not but be instructive. But a detailed discussion of this point would take us very far afield and must be dispensed with. Suffice to indicate the emphatic position taken here by the author we are discussing. It is safe to say (and this is written with his personal approval) that the moral issue in history is his chief, though of course not his only, reason for holding to the presence of a transcendent Life in the movement of history. Instead of giving any specific quotations in support of this interpretation, it would be better to refer to his writings as a whole, especially to *Der Sinn und Wert des Lebens*.[69]

The older and more distinctly medieval view that the divine was present in history only in certain definite miraculous events of the past is becoming rapidly obsolete. The careful investigations of modern historical criticism have shown that, when evidences are duly weighed, all the periods of history come to look very much alike and the isolation of any one as a time when the gods walked with men becomes increasingly impossible. And as this leveling process goes on it becomes also evident that it is only a matter of words whether we call it Pantheism or Positivism or Mechanism, so long as we are not able to look beyond the facts we see. Not only is the present individual shut off from any unique relationship to the Whole, but there is not even a past glory to which he may look backward. He is an item in a long list,—a very dreary long list that gets longer and longer as research extends the boundaries of known history. His moral code which seems to him to have so high a sanction is calmly compared with a hundred other codes as one species of infusoria is compared with others. His political inheritance that has been bought with the blood of heroic men is, as a "form of government," coolly compared with other little institutions created for the same purpose, and points of similarity and difference duly noted. Even his religion is put alongside many other similar movements in the world's history, the sources from which it has come are critically inspected, and the number of its followers duly estimated. All the relative intensity and importance that he used to see in his ideals fades out of them during this cold-blooded treatment and they become only details among countless others. The present becomes as dead as the past; the attempted

[69] Cf. also *Kultur der Gegenwart*, Band *Systematische Philosophie*, article by Prof. Eucken.

vivisection has turned out, as it not infrequently does in other departments, to be a post-mortem. The particular time and the individual life are lost in the immensity of the whole.

And if, now, in discouragement, the seeker undertakes to forsake the historical standpoint altogether and return simply to the present and rejoice once more in the simple faith of his tribe,—to look upon life through *personal* eyes again, he finds it as impossible to do as it would be to revive the vivid faery world of his childhood. He sees now that a present just for itself and out of connection with the past would be simply a baseless puzzle, an atom loose in space, a meaningless noise in the dark. If he accepts history in its wide systematic form, it promptly engulfs him; if he forsakes it he is beached on an unknown shore: with it he becomes only an incident in an infinite series; without it he is an accident of chance!—"So befinden wir uns in einer höchst verworrenen Lage, ja einem unerträglichen Dilemma: wir können die Geschichte weder festhalten noch entbehren; wir geraten ins Leere, wo wir sie abschütteln, wir verfallen einem Schattenleben, wo wir uns ihr unterwerfen."[70]

Thus the supertemporal seems to be dismissed altogether and we are left with a thorough-going positivism on our hands until, behold, this very science of history calls us back in an unexpected way to the conception of an over-ruling Unity of some sort.[71] That is, *laws* are found to hold good in the sweep of history, and laws require explanation. There seems to be development and growth, the reality of which shows inner connection and organization of long stretches of time. But if the successive moments were as mutually exclusive and other as a casual observation would lead one to suppose, how is this organization (which, like any other type of organization, is a form of unity) to be accounted for? Once more our author answers, only by the presence in history of a supertemporal Principle,—a Principle that is not dissipated into the infinitely many by the lightning shutter of the present moment.[72]

Another consideration which may easily be construed as a corollary to the above and which may help in an understanding of it, is that, on a simple mechanical plane, it is quite impossible to have any standard of evaluation of different events and, for that matter, any degrees of value to test. In a chain all the links suffer the same tension; it is folly to speak of one as more "important" than another. And in a simple

[70] *Geist. Ström.*, p. 262.

[71] *Ibid.*, p. 257.

[72] *Ibid.*, p. 268.

mechanical series no one step is more "significant" than any other. The total importance of each and every moment is summed up in this, that it is the consequent of the moment that preceded it and the causal antecedent of the moment that is immediately to follow. Thus in a sense, each one gathers up all the past and with equal completeness foreshadows all the future. One in its outward form may be a moment of inaction and stillness; the next a cataclysm: but in reality the latter contains nothing new or different; it only articulates the hidden secrets of the *apparent* quiet that preceded it. Such a world knows no rank nor condition; it is no respector of moments nor of men.[73] On this basis, to speak of true or false steps in the history of humanity is like speaking of true or false geological changes in the Silurian era. If, on the other hand, there is some foothold, some rock that does not go with the stream, it is possible from there to measure its changing currents. If in history each event is related, not merely to a vanished antecedent, but to a world of meaning and life that does not vanish with the passing of time, we may speak of events as having more or less significance, and of ideas or convictions as having more or less of truth. And, as we saw above, even historical criticism tends in the long run to demand some such a resource of interpretation. It becomes a "science of history"; it organizes its material as other sciences do; it finds laws to some extent inherent in its data; it speaks of the "logical" or "natural" or "necessary" result of this or that event,—just as if the apparently distinct moments of time were really bound together in a unity analogous to that of an argument or a purpose![74] It seems that even on the shifting and crossing currents of history the explorer *is* able to find his way: perhaps there is a compass needle that does not turn with the ship!

And not only does some sort of time-spanning reality furnish such a desired standard of evaluation but, we are told, it lifts man completely out of the disheartening dilemma into which, as we saw above, he is plunged by the positivistic view of history. He can assert his personal importance in the very face of the bewildering multitude of historical humanity; he can proclaim his own truth in the very midst of the Babel of tongues. All this is his, if only he can show himself to be a child of Eternity as well as of time. "Die unerlässliche Voraussetzung alles dessen aber ist eine unmittelbare Gegenwart der ewigen Wahrheit durch den gesamten Verlauf der Geschichte, die Möglichkeit, sich jederzeit aus

[73] *Geist. Ström.*, p. 267.

[74] *Ibid.*, p. 257.

edem Strom des Werdens in sie zu versetzen."[75] Indeed, under these circumstances the individual finds even a great advantage in his connection with history,—the very connection that at first flush seemed to engulf him. The world of the Geistesleben is high above the plane of mere events; its inner riches are not thrown broadcast upon the air. They must be fought for, taken by storm, and no one isolated man is equal to the task. The greatest truths have been slowly and painfully won throughout long historical movements in which the talent and even genius of countless men have been employed. Take, for instance, the essential heart of truth in Christianity, in Science, in Democracy; how little could it come in response to the efforts of one man! As well might he try, single-handed, to build a Roman Empire or a Panama canal! "So bedarf unser Streben nach Entfaltung einer zeitüberlegenen Geistigkeit einer wirksamen Unterstützung; eine solche liefert ihm aber die Geschichte. . . . . In jener (esoterischen Geschichte) mag ein selbständiges Geistesleben hervorbrechen, das durch allen Wandel der Zeiten hindurch auch zu uns spricht und unser eignes Streben zu fördern vermag."[76] Thus on the one hand the individual's own efforts are powerfully reinforced by the numberless other factors in the historical movement of which he forms a part and, on the other hand, he is thus enabled by the very rôle he may play in history to have a part in a Life that is high above the mere before-and-after of historical succession.

It follows that men differ in the degree to which they are carried with the temporal tide. Many live lives but little above the sheer mechanical level of successive sensations; some men are great because of the strength of commanding personalities and their grip on truth. And as men, so do events, differ in the degree to which the message of the All is embodied in them. There is the humdrum of everyday life that runs off mechnically, almost unconsciously; on the other hand, there are the intense moments, the crises, the turning points that make the destinies of men and nations. It is there that, in a special and unique way, one feels the touch of the Everlasting. "Durch die ganze Geschichte bleibt echte Geistigkeit und blossmenschliche Lebensführung in hartem Streit miteinander."[77] . . . . . "Das wahrhaft Grosse waren dabei nicht einzelne Gedanken und Bestrebungen, sondern eine neue Art des Lebens gegenüber den Zwecken und Meinungen des Alltages."[78]

[75] *Hauptprobleme*, p. 67. Cf. also *Geist. Ström.*, pp. 268-269, etc.
[76] *Geist. Ström.*, p. 265.
[77] *Geist. Ström.*, p. 266.
[78] *Ibid.*, p. 265.

Two other points remain to be noticed in this review. In the first place, in history as in the individual life, real transcendence, real truth, is reached not in logic-chopping syllogisms nor the bland and placid reflections of the monk or recluse, but in the great spiritual struggles and efforts of the leaders of men. The great truths, in history as in the individual life, are mighty moving forces,—not mere sheen upon its surface.[79]

And finally, if the life of both the present and the past has its center of gravity not in the plane of the moments that vanish as fast as they come, but in the transcendent unity of the Geistesleben, then there is a way for the present to participate in the wealth of the temporally vanished past without being simply the mechanical resultant of it.[80] I imagine that one might illustrate his meaning in some such homely way as this: Suppose I touch one hand with the other; a strange sense that both are "me" arises at once. That is, the experience is altogether different than that of touching an "outside" object. And this feeling is evidently nothing that comes simply from the end organs of touch, nor is it due to any particular external conditions that mediate the contact of the two hands. It comes from an inner relationship or unity that, while active in the two hands, does not partake of their "twoness,"—that is not separated by their separation. Perhaps in some such way as personality thus rises superior to the manifoldness of space, it in our little lives and much more the Geistesleben in history, rise superior to the excluding multiplicity of time. Thus the present feels itself part and parcel with the past (and with what it knows of the future) because the same Life throbs in it all.

Considerable space has been given to the exposition of Professor Eucken's view of time and the timeless because, in the main, his method is a very original one. The custom has been that the philosopher should first work out his view of the world on metaphysical or epistemological grounds and then construct his ethics and philosophy of history to match. But in this instance the order is reversed. The ethics and philosophy of history stand first in importance. To be sure he does not attempt a philosophy of history or of the moral life in isolation from metaphysics. On the contrary he considers a systematic world view to be of prime

[79] Cf. *Geist. Ström.*, pp. 266, 268, 272.
[80] *Ibid.*, p. 267.

importance. A part of the data for this view he finds, with Kant, in the postulates of morality; the rest he gathers from the needs of the historical life itself that it is the very object of that world-view to explain.

And, incidentally, there has been little attempt at criticism. The reason is not far to seek. We have been interested in just one great characteristic of the "Geistesleben,"—its superiority to the plurality involved in succession, and with his view on this point the writer finds himself in substantial agreement. There are other features of his conception of the all-embracing Reality that, to say the least, would admit of some debate. But if we consider his conclusion with reference to time to be that, in its ultimate existence, the World-All is not temporally conditioned but that, instead, time as a connected series is a determination of that Life, then against such conclusion we have no complaint to bring.

Of course, the object of this section of our discussion has not been merely that of presenting the views of Jena's veteran philosopher, worthy as such an aim might be. Europe has at present another great thinker whose interest in the time problem is fundamental, whose treatment of it is strikingly original, and whose final conclusions seem to differ as wdely as do his methods from those of Professor Eucken. We refer to Professor Henri Bergson of Paris. Instead of starting from the facts of ethics and history, his method is a psychological-biological one. And instead of concluding that the basis of existence, the ultimate Life of the world, is timeless in its inner character, he insists that it is there and only there that "real" time exists! To this seeming antithesis of the view above discussed we shall now turn, to learn as nearly as possible how the two views stand related to each other.

Bergson

When one goes from the reading of Professor Eucken to Professor Bergson's work he finds himself in a wholly new world. With the change of language there is also a complete change of method, of standpoint, of personality. The heavy and intense earnestness of the German is followed by the amazing brilliancy and originality of the French philosopher. Perhaps the difference is partly that between the time-honored little city of Goethe and Schiller and the brilliant capital of France.

But underneath differences of form there are many points of agreement. One leading conviction that is common to both is that truth does

not live in the intellect alone, nor indeed even chiefly there. Both are opposed to intellectualism, rationalism in any form. The mere concept may stand for concrete experience, may act as substitute for it in our intellectual operations, but it is never equivalent to it any more than a guide-post is equivalent to the city it points at, or a photograph to a man. Real truth Professor Eucken finds in the wearing spiritual toil of individual men and in the ponderous swing of history; Professor Bergson finds it in the indescribable immediacy of intuition. That really final datum for which the philosophers search and have searched so far lies so near they overlook it. Like Sir Launfal they made long pilgrimages in quest of the blessing that, without their suspecting it, is always waiting for them at their very gates. In the inner life lies the secret of the outer world. What is time? It is not an outer moving thing nor a mathematical medium in which events are strung along. If one would really know what it is he needs simply to gaze into the molten mass of the soul: no matter if, as with a Swiss landscape, the better one sees it the less able he is to tell us what he sees! The important thing is that he should *see*. One is reminded here again of St. Augustine "Si rogas, quid sit tempus, nescio; si non rogas, intelligo!" So also Henri Bergson. Inner experience is burdened with truth that the intellect cannot construe. It is like attempting a chemical analysis of protoplasm; the reagents kill the specimen. To be sure this conception of truth diverges from that of Professor Eucken in the direction of mysticism; but both are opposed to rationalism at all events, and are themselves not so far apart as might at first appear.

Even for an introductory outline it is still necessary to present his main conceptions a little more in detail. The essential nature of intelligence, as opposed to instinct, he finds in its tendency to deal with its world in a quantitative way, to project it in a conceptual,—i. e., inorganic, mathematical, and in the last analysis spatial form. The mind constructs its concrete world wholly in spatial terms; it is quantitative, divisible; its parts are mutually exclusive and distinct. Intellect is the method of dealing with environment by making tools out of inert matter, and making use of these through a knowledge of their physical, calculable properties. Instinct is also a method of dealing with environment but it consists in growing living organs to meet the demands of outer life. Man knows geometry, but triangles have no such things as history or innerness about them. He can make use of the simple quantitative relationships of triangularity for this very reason that they involve nothing like growth or change or decay. Bees, on the other hand, make hexagonal cells

without knowing any geometry nor any "why" of a mathematical sort. The latter method is obviously more convenient for the specific purpose of building honey cells; the former is just as obviously more flexible, capable, indeed, of indefinitely varied application. If the former enjoys and preserves an immediate touch with specific, growing, changing existence, the latter finds its own immeasurable advantage in the formulation and understanding of general, though for that very reason abstract, laws. Intelligence is successful so long as it can deal with magnitudes,—can measure, separate, count, compare them. This is why the physical sciences make such progress; it is also why Biology seems to succeed only so far as it can be studied from physical standpoints.[81] And just as it builds its outer world of objects, so it tends to construct its inner world of ideas to match. Thus inner states are thought of as separate, countable; they are associated, "added together," "broken up," etc., like veritable things of the outer world.[82]

As the author suggests, however, there is a certain advantage in this sort of misrepresentation. The "outer" world in which society is built up *is* this projected world of space and quantity. The inner life of my personal organization is peculiar to me. Nobody else can know immediately how my personal experience "looks from the inside." The world we share with each other is the physical world of perceptive consciousness and that is a spatial one. Now it is little wonder that, in seeking to make our inner life communicable, we should cast it so far as possible in these same quantitative terms and make of it an analogy of space. Just as we analyze the confusion of objective existence into unities and identities and attach a word to each (and perhaps the definite naming is just one phase of the analyzing), so we tend to break up the fluid, interpenetrating life of consciousness into "states" and "relations" and emphasize the mutual externality thus aimed at by affixing names, as before. And just so far as we can reasonably carry this symbolic division of what, in its truest self, is indivisible, to just that degree is personal, social communication possible. One thing, too, that contributes to the success of this seemingly self-contradictory procedure is the fact that much of our life is really lived in a mechanical way. In reflex and habit our actions are often almost as devoid of inner consciousness as would be the corresponding acts of a mechanical (i. e., merely spatial) automaton; and so the spatial analogy of the discreteness of words serves to represent, with a fair degree of accuracy, what is going on. And further: although lan-

[81] *Creative Evolution*, p. ix ff.

[82] Cf. *Time and Free Will*, pp. xix, 128, etc.

guage may be primarily the product of our gregarious tendencies, it comes at the same time to characterize our inner life. Just as we tend to acquire mechanical coördinations for physical movement, so, too, we acquire habits of thought; as we communicate with other people in terms of language, so we tend to think in words and symbols,—at least so long as our consciousness is of the ordinary, work-a-day sort. Thus the spatial analogy of our intelligent processes, though based ultimately on an error, turns out to possess enormous advantage in the mediating of social intercourse and the systematizing of thought.

But on the other hand, we must not, because of these advantages, forget the more or less figurative character of this way of dealing with life. Just as the opinion that we write out in the form of a sentence is not itself cut up into words and punctuated with commas and semicolons, so our inner life cannot literally be granulated into a mass of distinct ideas.[83] It is on this account that our most momentous decisions, our most profound loves and hates, are just the ones that find least support in our symbolic thinking and are least expressible in words. If, in the crises, our reaction seems nonrational, it is only that then the sovereign Self has spoken, and in its presence all our pettifogging and logic-chopping is of little avail; at such a moment all mere ideas and words, themselves but the servants of that Self, must stand aside. That is to say, if our purpose is not simply to communicate with others or to construct an entertaining logical Castle in Spain,—if, instead, we want to know the ultimate energy and impulse of the living World, we must forsake the quantitative mathematical symbols of ordinary thought and "live into" the actual movement and immediate experience of creative power. The cinematograph presents a series of static views and these, when the interval between them is made very short, may suggest very strongly the fact of motion. But however rapid the succession of these simultaneities may be, no real movement can ever be produced. Or again, shadows may indefinitely resemble, and even serve to represent, concrete objects in the outer world, but no infinite addition of the shadows could ever produce a ponderable reality. Even so are the artificial entities of mathematical physics and analytical mechanics powerless to give us any revelation of the actual surging swell of the Ultimate.

Now in each of these realms, the symbolic, quantitative one of matter and space and the real qualitative depths of immediate experience, there is an element that we identify as time and this confused double identifica-

[83] *Time and Free Will*, p. 164, etc.

tion is the heart of error in views of the reality of time. There is, on the one hand, the outer time that we divide into hours or seconds or eras, the homogeneous characterless medium of Newton, the independent variable of our mathematical equations in theoretical mechanics and astrophysics, the time that is infinite in length and in divisibility; on the other hand is the experienced, inner sense of duration, the heterogeneous flow in which things grow and grow old and of which no two moments are the same, the time that, as it really occurs, eludes infinite divisibility by its very concreteness and baffles our most expert mathematical calculus. These indeed seem to be two very different affairs, and if such a real difference is there it is futile to attempt to abolish it by christening both with the same name. And Professor Bergson's startling suggestion is this: Call the first one "space"; only the second one described above is real duration, real time!

Perhaps our first question in reply to this revolutionary program is, "How in the world did two things so absolutely and fundamentally different ever get confused?" And for his answer Professor Bergson takes us to a very unexpected region of thought, i. e., to the psychological notion of intensity. Here, before they come in sight of the time question at all, philosophers, along with ordinary, unprofessional, common-sense people, have become the victims of an easy fallacy, and all the woes of the time-and-timeless controversies as well as the dogged hostilities of the free-will debates result logically enough from this unobserved false step. When I lift up a brick I am conscious of strain and exertion, and when thereafter I lift two bricks with the same hand, what could be more natural than to say that I feel twice as much strain and exertion? Of course, the second strain feels different than the first, but why not say that this difference in feeling is a difference in quantity of feeling just as the difference in the cause is the simple quantitative one of 2 to 1? In the more personal relationships we are less tempted to this sort of reasoning. For instance, it does not take twice as much love to love two brothers as to love one. But in the ordinary realm of sensation and effort of a physical sort, we habitually speak of degrees of intensity and mean it, too, in an admittedly quantitative way. And just here, says Professor Bergson, we err. To say that the sensation is twice as intense because the stimulus is twice as large is to see psychic states refracted through space. Considered apart from such analogy the sensations or feelings are simply qualitatively different experiences possessing perhaps more or less internal complexity, which can no more be measured in

mathematical terms than "gusts" of emotion can be represented on a weather map.

But if we once allow the spatial analogy a foothold in consciousness, it tends to cover, in the same unpermissible way, more and more ground. For instance, it prompts us to regard the inner sense of duration as twice greater in one case than in another just because the hands on a clock or the sun in the sky have moved through twice as much *space* in the first instance. This, accordingly, is only one (though perhaps the most important) application of the tendency of intelligence in general to represent everything, even its very self, in spatial terms, and therefore ultimately to misrepresent it. And if, then, it can be shown that all quantitative calculation, including all distinct multiplicity and measurable magnitude and even the notion of intensity, is misdirected when applied to states of consciousness, then we need have no hesitation in saying that the inner real time of our intimate experience cannot be the "t" of the mathematical equations but is simply a unique and fundamental aspect of the living conscious being. And furthermore, if all notions of quantity are as such spatial, then, of course, quantitative time along with the rest is a spatial phantom,—the ghost of real duration. These things Professor Bergson seeks to prove.

In what follows the intention is (1) to discuss his notion of magnitude and multiplicity as applied to conscious states, since this is a fundamental premise in his conception of time, and (2) to seek to understand the latter by means of a comparison of it with Professor Eucken's view on the same subject. This comparison has been prompted by the fact that the two views seem at first sight to be diametrically opposed to each other. Whereas Professor Eucken holds that the intrinsic character and greatest glory of personality is its power to transcend the merely temporal, the Professor in the College de France insists that it is in conscious life and there only that time is real. If the conclusions of these men are really as opposite as they claim to be, then we may fairly feel that at the present writing the time problem is very far from a solution. And if it should appear, on the other hand, that these two men, so different in method and terminology and general aim, still hold conceptions that are in the last analysis very similar, such an outcome might help us to be more optimistic in the matter.

First, then, with regard to supposed quantitative features of psychological states. Sensations, perhaps the simplest psychic elements,

are generally said to possess three attributes,—quality, intensity, and duration. Professor James insists that they have extensity as well. But this notion of extensity as an attribute coördinate with the other three, Professor Bergson, I believe, does not consider. At any rate there is no effort to refute James's theory while at the same time all other quantitative relationships are condemned precisely because of their quantitative character. He does recognize extensity as a *quality* of conscious states,[84] but this is deliberately opposed to extension as the property of the spatial world, and this latter seems to correspond to what James means by extensity, in which case they are very far from an agreement. Quality also is not so much discussed, but for the opposite reason. He not only holds that quality is real, but makes it about the only attribute of conscious states that is real, even duration being ultimately a quality of conscious states. But we must not fail, here at the very start, to form some exact conception of the sense in which conscious states have quality. Take, for instance, a sensation of red. In saying that its quality is one attribute of the sensation, we surely do not mean (1) that the sensation of red is itself a red object. It would not show up in a spectrum analysis. Nor (2) does this reservation necessarily imply that, on the contrary, the red as such exists only in the thing of the outer world. If it did imply that it would surely be wrong, as a slight acquaintance with physics would serve to show. We have a sensation of red; we do not, on the one hand, have a red sensation, nor, on the other, does our sensation as an inner fact somehow stand related to an outer fact called red. The red is the object of perception, the content of the perceived fact, without implying any of these extreme hypotheses. This is surely the sort of thing that is meant when we say that sensations have quality as one attribute.

Now with this conclusion in mind, let us turn to the question of intensity. Professor Bergson denies that conscious states have intensive magnitude. This, being a quantity, is really a spatial metaphor read into consciousness. But it must certainly be understood at once that for the act of perception, considered as a fact in reality, to have dimensions of magnitude is one thing; for perception, considered as a process of apprehension, to embrace facts and relationships of quantity, is quite another. And the question here must finally come to this: Do we not perceive intensity just as really, and in the same sense, as we do quality? And when it is put in that light I doubt very much that the facts will seem to warrant a negative reply.

[84] *Matter and Memory*, pp. 277-293.

There are some features of Professsor Bergson's contention that we readily admit to be valid. (a) For instance, most of our conscious states are utterly irreducible to exact mathematical formulæ. Love, hate, ambition, anxiety, etc., can scarcely be rated by percentage, or any other mathematical standard, although it certainly does seem valid enough to speak of even these in terms of more or less, which are literally quantitative terms. And, if we come back to simple matters of sensation, we may well admit (b) that a bright light, for instance, produces a different effect in consciousness than does a dim one. What we find it hard to accept is not that there is qualitative difference between the two, but that the difference is wholly and only qualitative. Further (c) it goes without saying that consciousness is not a sort of force of a varying power called intensity that might conceivably be measured in dynes. But granted all that, we could still be aware of greater intensity when looking at the sun in the same way in which we are aware of its color as a quality. And it is intensive magnitude of just this sort that would have to be disproved in order to make out that quantity in general or time in particular was not real as a constitutive relation in perceptual experience. The author's analysis of our experience of differing intensities is very ingenious, and his conclusion that in such cases there is always (1) a change in quality of experience and (2) a change in degree of complexity of conscious contents, seems to be entirely valid. But his contention that these latter changes sum up completely what we ordinarily regard as differences of intensity is not convincing.

It might conceivably be replied to this that we can be just as vividly aware of a dim illumination as of a bright one,—such at least seems true enough as a psychological fact. But (1) this would not help the opposing view any since it virtually admits degrees of consciousness. Equal quantities are just as much magnitudes as are unequal ones. And besides (2) the equal awareness in case of the less intense stimulus is generally due to the presence of other ideas or concerns than the simple sensation resulting from it. For instance, a child shut up in a dark room may be even more vividly aware of the darkness than he would be of bright light; but it is because there are other things on his mind than just the inert passive darkness. And this interpretation is corroborated (3) by the fact that, other things being equal, decrease in sensation does tend toward unconsciousness. And even the precautions we take in our sleeping arrangements testify to this tendency for decrease in sensation to be accompanied by diminished consciousness. We conclude, therefore, that the claim that we can be just as vividly aware of a less intense stimulation

would not offer any real support to the Bergsonian view that there is no intensive magnitude in conscious experience.

His own way of stating the point at issue is on the whole a very satisfactory one. In discussing supposed intensive magnitude in the feeling of pressure he suggests that we "examine whether this increase of sensation ought not rather to be called a sensation of increase."[85] Perhaps that is a better way to describe the fact that I am conscious of greater muscular tension or a brighter light or louder sound. But would not the same improvement in terminology fit also the attribute of quality which, as a feature of conscious states, he admits so freely and rests so much upon? Suppose we examine whether a quality of sensation ought not rather to be called a sensation of quality, as for instance of red. As was seen above it is a fairly difficult task to say in just what sense the "red" characterizes the fact of perception and, rather than make the perception of red a red perception, it *would* be better to revise our general formula in just the way he suggests we modify our notion of intensive magnitude (increase and decrease). And yet our author insists that quality is an ultimate attribute of sensation, while intensive magnitude is not.

And the strongest consideration of all against the "new way of ideas" that we are here discussing is just this: As a matter of fact we *do have* the idea of intensive magnitude. Where did we get it? Suppose we grant his contention that when we speak of intensity in the old sense we are really mistaking greater qualitative complexity or multiplicity for magnitude; what is the analogy on which our mistake is based? The native of tropical Africa is not liable to mistake salt for snow when he has never seen any snow. How can a person mistake something for something else when that something else is "sui generis" and has never entered into his experience at all? The idea of intensive magnitude that we do possess (1) is not simply consciousness spatialized. To say that one light is brighter than another is precisely and explicitly to refer to an attribute that is other than spatial. A square yard of snow surface in light of constant illumination is in no way to be confused with a square foot that is nine times as bright. The difference we intend, rightly or wrongly, in the idea of intensive magnitude cannot possibly be reduced to terms of space. And if, then, (2) we resort to the notion of qualitative complexity, we still assert an error that, as an error, it is impossible to account for. That is, we may grant that, in any particular case you may choose, we have mistaken simple qualitative complexity for intensive magnitude;

[85] *Time and Free Will*, p. 41.

but this could not be true in all cases without removing all distinguishing content from the idea of intensity as something different; in which case, by the way, there has never really been any error at all. To repeat, we have the idea of intensive magnitude. If, upon closer inspection, it is exactly the same as the idea of complexity, then we have the author's authority for applying it to conscious states (it could make no difference which of two synonyms one made use of); and if the idea of intensive magnitude cannot be reduced to these other ideas as elements, then I submit that intensive magnitude must somewhere be a fact in experience, otherwise the idea could never arise. The very existence of the illusion testifies to the existence somewhere of the fact!

But next let us grant for the sake of argument that, when a conscious state seems to have greater intensive magnitude, the real fact is only that more and more conscious elements have been affected,—that "little by little it permeates a larger number of psychic elements, tinging them, so to speak, with its own color."[86] This very retreat has its dangers, for the idea of number has a desperately quantitative ring about it. This difficulty Professor Bergson meets by a fairly heroic effort. There are two types of multiplicity,—one that is homogeneous and discrete as magnitude, and another type that is heterogeneous and of which the parts, instead of being other and discrete, are fluid and permeate each other. "Our conclusion, therefore, is that there are two kinds of multiplicity; that of material objects, to which the conception of number is immediately applicable; and the multiplicity of states of consciousness, which cannot be regarded as numerical without the help of some symbolic representation in which a necessary element is space."[87] Indeed it is everywhere insisted that number as discrete magnitude is directly a function of space and that, therefore, it cannot apply to consciousness itself. But I think it may be fairly questioned that number magnitude in all forms can properly be eliminated from consciousness. Take for example his account of differences in the feelings of effort. "Our consciousness of an increase of muscular effort is reducible to the twofold perception of a greater number of peripheral sensations, and of a qualitative change occurring in some of them."[88] Thus in order to escape the notion of magnitude included in the ordinary idea of intensity, recourse is had to the conception of complexity,—of an organization of a greater number of conscious elements, though number is of the very essence of

[86] *Ibid.*, p. 8.
[87] *Ibid.*, p. 87.
[88] *Ibid.*, p. 26.

magnitude. To be sure, the sensations are really organized; they are not left distinct like grains of sand; but if they be not completely distinct they are at least distinguished to just the extent to which they can be regarded as "many," and this manyness is not a negligible feature of the situation but the very thing Professor Bergson relies upon to escape the admission of intensive magnitude. And this same explanation is given of many typical examples of apparent conscious intensity. "We shall easily understand this process if, for example, we hold a pin in our right hand and prick our left hand more and more deeply. At first we shall feel as it were a tickling, then a touch which is succeeded by a prick, then a pain localized at a point, and finally the spreading of this pain over the surrounding zone. And the more we reflect on it, the more clearly shall we see that we are here dealing with so many qualitatively distinct sensations, so many varieties of a single species. But yet we spoke at first of one and the same sensation which spread further and further, of one prick which increased in intensity. The reason is that, without noticing it, we localized in the sensation of the left hand, which is pricked, the progressive effort of the right hand, which pricks. We thus introduced the cause into the effect, and unconsciously interpreted quality as quantity, intensity as magnitude. Now it is easy to see that the intensity of every representative sensation ought to be understood in the same way."[89]

To be sure, it is pointed out at great length that the multiplicity here demanded in order to explain our seeming consciousness of magnitude is one of a very unique sort. It is not the plurality of spatial counting. Thus "pure duration might well be nothing but a succession of qualitative changes, which melt into and permeate each other, without precise outlines, without any tendency to externalize themselves in relation to one another, without any affiliation with number: it would be pure heterogeneity."[90] But would a multiplicity without *any* affiliation with number be real multiplicity at all? In this connection the purpose is not to point out a mere contradiction in his use of the word "number." We are quite aware that he deliberately uses the word in two senses. At the very beginning of his chapter on multiplicity he speaks, in a footnote, of the "vital distinction . . . . . between the multiplicity of juxtaposition and that of interpenetration . . . . . which it is the chief aim of the present chapter to establish."[91] The only question is, Does he establish it? Granted that conscious states melt into and

[89] *Ibid.*, pp. 42, 43.
[90] *Ibid.*, pp. 104-105.
[91] *Ibid.*, p. 75.

permeate each other without definite outlines, still can there be multiplicity that is totally without reference to number? If the states completely permeated each other we would have simply one new state in place of the old ones. But, as we saw above, some trace of their plurality or distinctness must be left in order to account for the illusion of intensive magnitude, which is itself only an incorrect reading of this very multiplicity. And in such a case it is futile to insist that it is a "qualitative multiplicity with no likeness to number."[92]

Or again, if it is literally true that "thus in consciousness we find states which succeed, without being distinguished from one another,"[93] where does the notion of multiplicity come in at all? There must be some difference distinguishing moments otherwise we could not even "string them out" in space, however unfortunate such a stringing out may be. If the notes of a tune really melt together and completely permeate each other, then why, as Mr. Balsillie asks, would it not be better to hear them all together, simultaneously? As a matter of necessity they must somehow (let us grant qualitatively) be distinguished, and just to that degree they *are* numerable if one choose to count them.

Without pushing the matter any further the writer, at least, is forced to conclude (1) that while there may indeed be degrees (another quantitative term!) of distinctness in the separateness of conscious elements, there certainly is no proof of a multiplicity that involves no magnitude at all. And (2) that if one hold that conscious states (for instance the perception of red) have intensity in the same sense in which they have quality (i. e., in this case the redness itself) then, even apart from the question of the two kinds of multiplicity, their intensive magnitude has not been disproved.

With this in mind we must turn now to his definite claim that time, considered as quantitative, is identical with space. As is evident from the discussion at the beginning of the paper, the writer is as little disposed as any one else to make time an outer medium in which experience exists. But neither need space be made an outer fact. Professor Bergson holds, along with the general run of idealists, that space is a product of mental activity and that without the latter there would be no such thing as space in existence.[94] All parties to the discussion seem also convinced that the quantitative time relations of the facts of experience are, too, the product of consciousness. The question, however, that we mean next to discuss

[92] *Ibid.*, p. 226.
[93] *Ibid.*, p. 227.
[94] *Ibid.*, pp. 92-97.

is whether this quantitative time is identical with space,—that being the ruling conception in Professor Bergson's view. The body of modern opinion is that time is a relation of magnitude even though it be not a metaphysical entity, and the burden of proof must rest on the side of the new interpretation. And the claim here made is that time and space are sufficiently and even characteristically distinguished, simply from the standpoint of the observer, as different quantitative relationships in the field of phenomena,—that one is as dependent on consciousness as the other even if they do not enjoy equal universality of application.

Having, to his own satisfaction, proved that consciousness itself contains no trace of magnitude, our author regards time magnitude as well as number magnitude as really determinations of space. They have been reduced to this by a process of elimination,—the process, namely, of having been shut out from the inner realm, and all outer quantity is held to be the same. Thus, "If space is to be defined as the homogeneous, it seems inversely that every homogeneous and unbounded medium will be space. For, homogeneity here consisting in the absence of every quality, it is hard to see how two forms of the homogeneous could be distinguished from one another."[95] Of course, *if* space is to be defined as the homogeneous! This begs the whole question. It is almost equal to saying that if all quantity is spatial it is all space. The very question is whether there is not more than one quantitative relationship established by consciousness. The word "homogeneous," by the way, is used throughout as equivalent to quantity. As his discussion of Kant and his agreement with him so far as space is concerned go to show, he does not regard even space as an empty ontological "room" for things but rather as a law—and therefore a homogeneous element—in consciousness. The point, then, assumed in the premise of his argument, is simply that we cannot consistently have two types of the quantitative in consciousness. One must be thrown out as "spurious,"[96] at least in so far as it is quantitative. And in this case, of course, it is time that must go, since space is conceded in the very definition of magnitude. Perhaps the best way to answer such an argument is to reverse its application. Time or duration in consciousness is simply and only qualitative, and so quality is really time and all qualitative distinctions claiming to be other than temporal are ultimately "spurious"! Of course, the latter conclusion is not a valid one, but neither is the other precisely similar argument. Space is homogeneous simply in the sense that, as a general law, it may be abstracted

[95] *Ibid.*, p. 98.
[96] *Ibid.*, p. 98.

from the matter of experience to which it is applied and so all differentia of specific cases be regarded as independent of it. And to say that it is "the homogeneous" would, from such a point of view, be identifying it with all law in general, which I suppose no one cares to do. And if its homogeneity be understood as that of the general law applicable to many things but, as a law, independent of the specific features of any particular case (and Professor Bergson claims to follow Kant in holding this view)[97] then there seems to be no good reason why there should not be other laws having the same possibility of abstraction and relating the facts of experience in another quantitative way. Such a law idealists have held time to be.

Another difficulty arises with regard to the notion of number. Kant held that number is the science of time as geometry of space. Now while it is doubtless at present impossible to make such a clear-cut distinction, still the question remains, Is it possible, with Professor Bergson, to regard number as wholly a determination of space? Since real time exists only in a qualitative realm which "has no relation to number," it is obvious that Professor Bergson must logically base the fact of number entirely on that of space. Even counting must be rescued from time. This is how he does it: "It is true that we count successive moments of duration, and that, because of its relations with number, time at first seems to us to be a measurable magnitude, just like space. But there is here an important distinction to be made. I say, e. g., that a minute has just elapsed, and I mean by this that a pendulum, beating the seconds, has completed sixty oscillations. If I picture these sixty oscillations to myself all at once by a single mental perception, I exclude by hypothesis the idea of a succession. I do not think of sixty strokes which succeed one another, but of sixty points on a fixed line, each of which symbolizes, so to speak, an oscillation of the pendulum. If, on the other hand, I wish to picture these sixty oscillations in succession, but without altering the way they are produced in space, I shall be compelled to think of each oscillation to the exclusion of the recollection of the preceding one, for space has preserved no trace of it; but by doing so I shall condemn myself to remain forever in the present; I shall give up the attempt to think of a succession or a duration."[98]

That is, in order to count sixty and have any clear conception of what it means, I must spread the whole sixty out in space and actually "picture

[97] *Ibid.*, p. 94.
[98] *Ibid.*, pp. 104-105.

these sixty oscillations to myself all at once by a single mental perception!" But certainly such an amazing scope of attention is hopelessly beyond our reach. According to Professor Wundt, eight is the maximum plurality of which we can be distinctly conscious in any single act of attention. In which case we seem to face the perfectly simple alternative: Either counting is, at least in part, a time function, which introduces the element of numerical quantity into succession, or else our real mathematics is limited to a number scale of eight units only, all higher numbers being purely symbolic like $\sqrt{-1}$. The truth of the first alternative would seriously disfigure the general scheme of Professor Bergson's theory; the second would be somewhat of a handicap for the rest of the world.

But our author is in most cases willing enough to follow out his ideas to their most extreme consequences. For instance, if time is not quantitative at all and if all magnitude is space, then not time nor even motion, but only space, is measurable. This conclusion, too, is definitely drawn and insisted upon. When we set out to measure motion or velocity, it only means that "we are to note the exact moment at which the motion begins, i. e., the coincidence of an external change with one of our psychic states; we are to note the moment at which the motion ends, that is to say, another simultaneity; finally we are to measure the space traversed, the only thing, in fact, which is really measurable. Hence there is no question here of duration, but only of space and simultaneities."[99] But does this ingenious method really eliminate the "t" from the mathematical notion of velocity ds/dt, or take away its quantitative character, which is the same thing, since mathematics truly enough knows no qualitative differences? In the first place we must notice a vestige of the older, quantitative conception in the fixing of "simultaneities." To be aware that various things are in the same plane in space, for instance, is to localize them just as truly as to show that they were in different planes. More than that; to show that they are all in this plane of two dimensions means that we have calculated their position primarily with reference to the other, the third, dimension which as a matter of statement does not seem to be a part of the plane at all. The plane could not be defined apart from the fact that it extends zero distance in one certain direction. And in a precisely similar way, it is measuring their time locus just as truly to say that two events are simultaneous as to say that they are so far apart in the time series. A moment without duration at all, an absolute simultaneity, is at the same time a determination made with refer-

[99] *Ibid.*, pp. 115-116.

ence to length of duration just as a geometrical plane receives its character as two-dimensional precisely through its relation to that third dimension which it does not include. To appeal to simultaneities is not, therefore, to escape the necessity of regarding time as quantitative or measurable; rather it is to assert it.

And even apart from a discussion of his explanation by simultaneities, we might well have a priori misgivings with regard to any method that professed to know velocity without measuring time. The simple formula ds/dt must remain a constant reminder that something is left out in such an attempt. If we accept all of Professor Bergson's conclusions, we are, of course, compelled to regard the "t" here as a spurious form of "s" in which case the expression for velocity reduces to ds/ds',—that is, it is defined with reference to space alone and so becomes identical with distance. But that is not velocity at all in any sense of the word! Or else the "t" is purely qualitative,[100] in which case differential "t" becomes a very rare specimen of absurdity, as does also all mathematics that professes to deal with it. And indeed something not unlike this is definitely taught in the idea that real motion is qualitative and so beyond direct scientific apprehension. But yet it is insisted that in some incomprehensible manner[101] mathematics is able to calculate future simultaneities through the very use of this "t" as quantitative. If true, it is certainly a most noteworthy fact that a concept known to be wholly and radically false should at the same time yield conclusions that are universally true.

It is perhaps unprofessional and more or less an "argumentum ad populum" to point out a lack of harmony between a technical conclusion and the views of common sense, but the requirements of a view that time is not measurable offer unusual temptations to such a procedure. All reference to a time as long or short is, in the last analysis, utterly unpermissible. We cannot speak of more or less time in any sense because that is to introduce the idea of magnitude again. Many seemingly grotesque conclusions result in this way from a consistent denial of the quantitative character of time, but under the circumstances we must resist their allurements. Suffice only to notice how such a denial reduces the ordinary suppositions of common sense to hopeless raving and flatly contradicts the data of all simple introspection.

But to get back to his explicit arguments, we must notice one more consideration that is found again and again in Professor Bergson's writings. The mind can construe only simultaneities. It tries to understand the

[100] Cf. *Matter and Memory*, pp. 246-259.

[101] *Time and Free Will*, p. 227.

flow of time as a sum of these just as it tries to construe motion as a succession of positions, i. e., of stops. Everyone is familiar with his famous cinematograph metaphor. The mind sees the reality of nature in the form of images which are always cross-sections and contain in themselves no movement or action. As simultaneities they represen space and not time. Therefore, once more, space is the fact knowable by intelligence, conceptual time is only space, and real duration turns out to be unrepresentable. The paradoxes of Zeno are thus the direct result of this tendency to see time as a succession of simultaneities and motion as a succession of stops,[102] whereas both are continuous and so irreducible even to an infinite number of mere cross-sections. But it is certainly difficult to see how time and space are to be so distinguished. Of course, time is not a succession of simultaneities nor motion of stops. But then, neither is space a summation of planes. Neither space nor time, that is to say, is a sum of zeros, as our differential expressions when pushed to the limit seem to indicate. And if we admit that the differential analysis only implies their infinite divisibility, and therefore their continuous character, the fact remains that both space and time are subject to the same interpretation and so no basis is afforded for relating them in such utterly different ways to consciousness. The parts of space are not separated from each other by definite boundaries chiefly, I suppose, because space is not an addition of separate parts. Considered as a law of mental synthesis either space or time is infinitely divisible in that one would never reach a point where he could not apply his analyzing any further; considered as embodied in concrete experience, neither is divisible beyond a certain minimum discernible. There is no basis for a distinction on this score.

This point is well illustrated in the case of motion which, though there be "nothing in common between quality and quantity," seems to be very intimately related to both space and time. As a matter of fact, as we saw above, Professor Bergson puts motion on the side of time as a continuous quality and therefore unrepresentable by the intellect. But motion is equally a function of space and time, and it is obvious enough that it cannot be a continuous function with reference to one of them and discontinuous with reference to the other,—at least if uniform motion is possible, and I am inclined to think that the same consideration would hold for all cases. At any rate the one case is enough for our present argument.

[102] *Matter and Memory*, p. 252.

For the reasons above briefly outlined we are unable to accept his conclusions (a) that quantitative time is really space, (b) that therefore, regarded as coördinate, space and time cannot be characteristically distinguished, and finally (c) that the reality of time must therefore be sought in some altogether different sphere. On the contrary, we are still inclined to insist that space and time are both constitutive relationships in experience, that both owe their very existence to the relating activity that functions there, and that therefore, in the last analysis, the consciousness that establishes these relationships is in its existence timeless. And the suspicion that we have harbored in all the above discussion, and which, in conclusion, we shall seek to justify is this: The conceptual time that Professor Bergson dismisses as a spurious idea because it is quantitative, is approximately what the so-called absolutist regards as the characteristic time synthesis in phenomena, and that the pure duration that is not measurable or quantitative in any sense and is thus so thoroughly distinguished from conceptual time, possesses a remarkable similarity to what others have regarded as timelessness. This comparison will be elaborated by pointing out a number of ways in which his particular arguments and conclusions with respect to this pure duration resemble the arguments and conclusions which ordinarily, and particularly in the work of Professor Eucken, pertain primarily to a timeless order.

Consider for a moment his argument that a pure, qualitative time is necessary to account for the continuity of sense perception and, as closely allied with this, the phenomena of memory. The facts are these: The process of perception is, physically (i. e., spatially) considered, a well nigh infinite plurality. When we see a red color it means that approximately 400 billion separate and distinct light waves impinge upon our retina. Considered from the standpoint of measurable time, every individual wave has its particular date in the series to the exclusion of every other. And yet we do not experience the now of each of these impacts separately but countless millions of them fuse together to give one conscious visual percept. And the only way to explain this collective immediacy is to suppose that somehow consciousness is not squeezed into the narrow confines of the mathematical present but transcends the series at least to the degree that it is concretely present to a plurality of successive elements. Now this very point is insisted upon in *Matter and Memory*,[103] except that there "length of rhythm" is the name given to what others might call degree of transcendence or time-span. Indeed he

[103] p. 272 ff.

even follows Professor Royce in concluding that there might be beings of immensely wider "rhythm" who would take in whole millenniums of time in a single glance. And on the other hand, of course, the quantitative time of physical succession whose present is the mathematical limit of an infinite converging series, is only conceptual time, i. e., ultimately, space. And the property of consciousness by which it is able to be immediately present to a vast number of these simple "nows" and fuse them all together in one percept, is real time, pure duration. Exactly the same argument is used on both sides to prove exactly the same thing and they can be made almost interchangeable by simply reversing the terms "transcendence" and "pure duration." It is obviously a matter of rhetoric only which we shall use.

Similarly in the phenomena of mental reproduction. Suppose I look at a field of snow from the comfortable vantage ground of a steam heated room. Although I feel no present sensations of cold, and although, on the other hand, coldness is not to be regarded as a visual element, still I seem to *see* that it is cold outside,—the snow "looks" cold. The simple fact seems to be that the contents of past experience may be in a strange but real way embodied in the present percept. In fact, without such relationship to the past it is not difficult to show that the sensation of the present instant would be quite unintelligible. This is the heart of truth in the contentions of the Medieval Realists and has in the last century been elaborately treated in the writings of T. H. Green. And for sake of brevity we may couple with this fact of perception the closely related fact of memory. (Professor Bergson insists that the former is never found without the latter anyhow.) When, for example, I remember how cold the snow was on a certain definite past instance, I only make explicit what was implicit in the above-mentioned visual perception of "cold snow." The memory image, as an image, is present in the actual and only sense of the word and yet I am conscious of it as a past, not a present, fact that now presents itself to me. The physical disturbance in the brain is a present event and, as definitely related in an order of succession, so is the mental image itself. But somehow its home, its proper element, is the past; it embodies in its own immediate content a part of a vanished world. And Professor Bergson is unquestionably right in insisting that, from the standpoint of the mutual externality of the moments of succession, such a living past is beyond accounting for.[104] But the point we want to urge here is simply, Why call this capacity of consciousness to

[104] *Matter and Memory*, pp. 85-105.

deal with what lies beyond the present fleeting moment "real duration"? Why not better call it some sort of transcendence of the time series? In *Mind* for 1909 Mr. A. R. Whately discusses exactly the same point and from the very same arguments concludes that "the principle of separation lies on the side of the temporal self, the principle of unity on that of the eternal," which is a "doctrine of the immanence of the ego in its states . . . . . and yet of transcendence."[105] This latter terminology is the one current at present, but it is obviously essentially the same conception of consciousness as that which Professor Bergson sets forth in such a new garb. And where the conceptions are not materially altered, it is certainly better in the interests of lucidity if nothing else, to continue to use terms in the same way.

This relationship of consciousness to memory is closely connected with another favorite fact of those who hold views analogous to the Kantian. Perhaps indeed it is only stating the same fact in converse form. Just so far as consciousness is immediately in touch with past and future (however narrow its horizon may be) to that extent we may say that its "present" is not the mere point dividing past and future, but transcends it. The consciousness of the present moment carries a heavy ballast of expectation and memory and these to a large degree make the present what it is. So runs the traditional description. Let us now compare the accounts given by the two men whose views of time are ostensibly so antithetical. Professor Bergson says, "Pure duration is the form which the succession of our conscious states assumes when our ego lets itself *live*, when it refrains from separating its present state from its former states. For this purpose it need not be entirely absorbed in the passing sensation or idea; for then, on the contrary, it would no longer *endure*. Nor need it forget its former states; it is enough that, in recalling these states, it does not set them alongside its actual state as one point alongside another, but forms both the past and the present states into an organic whole, as happens when we recall the notes of a tune, melting, so to speak, into one another."[106] Compare with this the following from Professor Eucken: "Die Vergangenheit ist dann nicht mehr eine blosse Vergangenheit, sie kann ein Stück einer zeitüberlegenen Gegenwart werden und damit eine Sache eignen Lebens, unablässiger Arbeit bleiben."[107] And such parallelism of statements on both sides might be

[105] A. R. Whately, *The Higher Unmediacy*, *Mind* for 1909, p. 373. Cf. also, Eucken, *Geist. Ström.*, bottom of p. 270.

[106] *Time and Free Will*, p. 100.

[107] *Geist. Ström.*, p. 269.

indefinitely multiplied. For both authors the being of consciousness vastly transcends the present instant; the chief distinction between the two is that one calls it "transcendence" while the other does not.

In another place several paragraphs have been devoted to showing that time, succession, as a relationship in which phenomena stand, is meaningless apart from the activity of intelligence. That is, time relationships are so much and so characteristically the work of consciousness that any reality, to be so related, must be thought of as present to some consciousness. And this is, in principle, no new contention. It is at least as old as the *Critique of Pure Reason*. And now let us compare that particular idea with the corresponding feature of the new philosophy. "What duration is there existing outside us? The present only, or, if we prefer the expression, simultaneity. No doubt external things change, but their moments do not succeed one another, if we retain the ordinary meaning of the word, except for a consciousness which keeps them in mind."[108] That again is certainly not a radical alteration of fundamental conceptions but chiefly an interchange of words with ordinary idealism. Kant held that time relations (those of before and after, succession, etc.) are established in the "synthetic unity of apperception" and if we choose to simplify the statement by saying that they are the work of the knowing consciousness, the essential principle is the same. And in this argument Professor Bergson shows that the time relations of "phenomena" are founded upon the superior reality of consciousness but adds that, for that reason, it is not really time, but space, that appears there. He shows that the existence of consciousness is assumed by, and is therefore logically prior to, the fact of temporal succession, but insists that in that account consciousness only really endures. Why not, then, apply the same process to the idea of space? As was noticed above, he holds that space is the product of mental activity. Take that away, then, and there would be no spatial relationships at all. Then why not say that objective space is really only conceptual space and that "pure" extension is only to be found in the mind? The reason here is obvious enough. To be the ground of the very reality of space the mind could not, without a hopeless circle in reasoning, be regarded as spatial in its own existence, and the word "space" is too closely associated with the actual space relationships of phenomena for it ever to be used as meaning *really* the transcendent ground on which these relationships depend. But because the very fact of time has less concreteness and more ambiguity and mys-

[108] *Time and Free Will*, p. 227.

tery about it, it is possible to use the word in these two very different ways.

And before leaving this feature of the subject it would be well to point out the close analogy of the above idealistic argument of Professor Bergson with the same much-quoted argument of Professor Eucken. The relationship of succession in the world of facts which the former calls conceptual time is exactly what the latter describes as the "nacheinander" of the parts of time; and the "real duration" in the conscious self by which the very series of succession is explained by Professor Bergson, is in this sense identical with "das überlegende Geistesleben" which for Professor Eucken makes the synthesis of this hopeless multiplicity possible. The chief difference is that the characteristic that one philosopher calls "real" time the other labels "timeless."

Every reader of philosophy is familiar with the metaphor of the "man on the bank" who only can know the flow of the stream. One does not see any movement when he is being carried by an ocean current precisely because he himself moves along with everything. And so we have often heard it contended that, in order for us to know the succession of moments as a succession, the standpoint from which consciousness surveys it must be to some degree independent of the flow. In *Time and Free Will* we find this venerable (and certainly valid) argument in the following disguise: "Let us imagine a straight line of unlimited length, and on this line a material point 'A' which moves. If this point were conscious of itself, it would feel itself change, since it moves; it would perceive a succession; but would this succession assume for it the form of a line? No doubt it would, if it could rise, so to speak, above the line which it traverses, and perceive simultaneously several points of it in juxtaposition: but by doing so it would form the idea of space, and it is in space and not in pure duration that it would see displayed the changes which it undergoes."[109] If one keep it constantly in mind that, with Professor Bergson, quantitative time is space and "real time" contains no relationships of measurable time at all, it is evident that in his argument here quoted we have a new edition of exactly the same line of reasoning that many "absolutists" use to show the transcendence of the time flow by the self that knows it,—and, we might add, to the extent to which it knows it. The purpose here, of course, is not to discuss the validity of either argument or both but only to point out the similarity that underlies the outer contrast in their terms.

[109] *Time and Free Will*, pp. 102-103.

And along this line, too, it is impossible to keep from mentioning the striking similarity between Professor Bergson and Professor Royce[110] in their treatment of the "specious present." That we should, in one grasp of perception, be aware of a whole series of events that, considered from the standpoint of their before-and-after, are quite distinct, is at first sight a startling paradox,—even if it does turn out upon reflection that without such an inclusive survey we could never be conscious of succession at all. In "The World and the Individual" this seeming paradox is beautifully illustrated by reference to our consciousness of a musical phrase or melody. The very condition of its being a melody is that we should hold the successive notes apart in time and yet the primary condition of our knowing it as a melody is that we should be conscious of its movement as a whole. And it is a question of the range of consciousness simply (not of the events as a series) whether we will be conscious of a minute or million years in this direct and immediate way. And now, oddly enough, this very figure of speech that is so prominent in Professor Royce's discussion of time, is the identical one in terms of which the French Professor likes best to explain and enforce his own view.[111] This would not be surprising in the least were it not for the fact that the two writers seem to hold such opposing views, the one insisting that even the human consciousness is in its small way an expression of the Eternal, and the other that consciousness alone possesses real duration. And conversely, if we find that "pure duration" is related to the plurality of succeeding moments in precisely the same way in which "Eternity" is related to it, we cannot well escape the suspicion that the Eternity and pure duration here in question have very much in common.

But that is a digression. In other respects the thought of Professor Bergson only slightly resembles that of Professor Royce. In his opposition to rationalism of all sorts he is much more closely related to Professor Eucken, and to the more explicit comparison of these two we must now return.

It was pointed out at length in our foregoing discussion of the Jena philosopher that the Geistesleben of his view is not equally concerned with all events in time nor equally present in all individuals. It is only in the crises that the Eternal comes explicitly into view, whether we refer to the crises in the life of a man or the history of a nation. The great world of Truth and Life is always there, always real; but much of the time we

[110] *The World and the Individual*, Vol. ii, Ch. 3.
[111] *Time and Free Will*, pp. 100, 105, 111, 123, 127, etc.

live in a mechanical way, oblivious to wider relationships. We walk with our eyes fixed on the ground, and forget the sun that makes our very perception of it possible.[112] The point of interest now is to see how this feature, too, of the Geistesleben is paralleled in the Bergsonian world of pure duration. The self that is not in quantitative (conceptual) time is by no means always prominent in human experience and conduct. We are occasionally aware of the deeper self, "but the moments at which we thus grasp ourselves are rare, and that is just why we are rarely free."[113] "It is at the great and solemn crisis, decisive of our reputation with others, and yet more with ourselves, that we choose in defiance of what is conventionally called a motive, and this absence of any tangible reason is the more striking the deeper our freedom goes."[114] Thus free and independent personality turns out to be a possibility rather than a gift; one's transcendence of the changing, mechanical details of his general experience is a function of the spiritual earnestness of his dealings with life and the breadth of vision he may attain. "Wie weit aber das Leben sie überwindet und eine überzeitliche Gegenwart erreicht, das hängt vor allem an der geistigen Kraft, die es aufzubieten vermag; bei uns selbst steht es schliesslich, ob der Schwerpunkt unseres Seins ins Vergängliche oder ins Unvergängliche fällt."[115]

And in both, also, is this intervention of the higher principle of a more or less nonrational type. The great objection that Professor Eucken urges against the absolute idealism of the Hegelian type is just that it tries to substitute "Wissen" for "Leben,"—that it dissipates the concrete into a mere shadow realm of formal ideas. It is a "transformation of the whole of reality into a tissue of logical relations. And this necessarily destroys the immediacy of life in all its forms. It banishes all psychical inwardness and at the same time all spiritual content."[116] The "mere manipulation of concepts . . . . . is like turning a screw in a vacuum where it meets with no resistance."[117] The philosophy of the Geistesleben is no mere intellectualism. The Absolute is not a Neo-Platonic pyramid of concepts, but an inner spiritual power. For Professor Bergson, similarly, the real self beneath the formal crust is something radically different than a logic machine. Indeed, as we saw above, it is

[112] Cf. *Hauptprobleme*, p. 26, and *Geist. Ström.*, p. 266.
[113] *Time and Free Will*, p. 231.
[114] *Ibid.*, p. 170.
[115] *Geist. Ström.* p. 271.
[116] *Problem of Human Life*, p. 502.
[117] *Ibid.*, p. 503.

at once the service and the danger of intellect that it does represent Life in the form of concepts. To know the "elàn vital" as it really is one must turn back to the simple immediacy of feeling, something roughly resembling, perhaps, the experience that accompanies instinct at its best.[118] And accordingly when this mystic power that knows no explanation in words and concepts (and "there is no common measure between mind and language" since the latter is incurably infected with the externalities of space)—when this power does rise, now and then, into active domination, it is equally without rational or logical ado. On frequent important occasions "we wish to know the reason why we have made up our mind, and we find that we have decided without any reason, and perhaps even against every reason. But, in certain cases, that is the best of reasons. . . . . and this absence of any tangible reason is the more striking the deeper our freedom goes."[119] Thus in both systems of thought the back-lying world of Power carries ideas, concepts, reasonings, on its surface, but only there; its inner reality is not a structure of Reason.

And with this retreat to inner immediacy and intuition, it is not strange that both should find a significant expression of this ultimate Life in the creativeness of artistic production. Indeed, for the German, art may even be an indispensible means to the real unfolding of life. Referring to "der nordische Mensch" he says: "so bleibt ihm leicht das Innerste der Seele unausgesprochen und seine eigne Tiefe verschlossen. Daher wird ihm die Kunst ein unentbehrliches Mittel, sich selbst zu finden, sein Eigentum in vollen Besitz zu nehmen, die Kluft im eignen Wesen irgend zu schliessen."[120] And in a very similar vein writes Professor Bergson: "The intention of life, the simple movement that runs through the lines, that binds them together and gives them significance, escapes it (intellectual perception). . . . . This intention is just what the artist tries to regain, in placing himself back within the object by a kind of sympathy, in breaking down, by an effort of intuition, the barrier that space puts up between him and his model."[121] . . . . . "Art lives on creation and implies a latent belief in the spontaneity of nature."[122]

[118] *Creative Evolution*, p. 176.
[119] *Time and Free Will*, p. 170.
[120] *Geist. Ström.*, p. 341, top.
[121] *Creative Evolution*, p. 177.
[122] *Ibid.*, p. 45.

In short, for both our philosophers, the great and underlying Reality that finds expression in all conative thought and action, in all originality and independence, all striving and progress, is a Life that does not fall apart into the multiplicity of successive moments of measurable time but owns instead an intimate inner organization. Oddly enough both men have been accused by reviewers of falling into a dualism by failing to show sufficient connection between the outer temporal process and this inner higher being.[123] It can be no accident that two conceptions, though they have names as different as "Zeitloskeit" and "duré pure" should thus be criticized for the same shortcoming with reference to the series that we ordinarily call temporal. The reason lies in the fundamental similarity of the two views.

This interpretation is corroborated, too, by another rather interesting coincidence. Professor Bergson's pure duration as it is supposed to characterize the "elàn vital" has been identified with the Eternity of the absolutist philosophers by two writers who seem at least to have opposite interests in doing so. M. Moisant, writing on "God in the Philosophy of Henri Bergson,"[124] finds the consciousness of the pure duration to be an expression of the Eternal. This article is naturally favorable in its attitude. On the other hand, Mr. Balsillie discusses "Bergson on Time and Free Will"[125] in a not altogether favorable tone, and concludes what is perhaps his chief criticism as follows: "The distinction between past, present, and future disappears, and our author virtually assents to the views of certain Neo-Hegelians, that beneath our finite form of consciousness there is a real mental life in an eternal present which a more attentive psychology can reach." In other words, an interpretation of his pure duration analogous to that urged in this paper is made by one man to defend and vindicate, and by another to attack, this much-discussed system of philosophy. This again is a coincidence, but no mere coincidence.

There remains one striking detail of the Bergsonian conception that must be mentioned in closing, viz., his conclusion that, under some conditions, effects may precede rather than follow their causes. Perhaps it is justifiable here to quote somewhat at length. "In resuming a conversation which had been interrupted for a few moments we have happened to notice that both we ourselves and our friend were thinking of some new

[123] Solomon, *The Phil. of Bergson, Mind*, 1911, pp. 15-40, and David Morrison, Review of Eucken's *Geist. Ström.* in *Mind* for 1905, p. 268.

[124] *Revue de Philosophie*, April, 1905.

[125] *Mind*, 1911, pp. 357-378.

object at the same time. The reason is, it will be said, that each has followed up for his own part the natural development of the idea at which the conversation had stopped: the same series of associations has been formed on both sides.—No doubt this interpretation holds good in a fairly large number of cases; careful inquiry, however, has led us to an unexpected result. It is a fact that the two speakers do connect the new subject of conversation with the former one: they will even point out the intervening ideas; but, curiously enough, they will not always connect the new idea, which they have both reached, with the same point of the preceding conversation, and the two series of intervening associations may be quite different. What are we to conclude from this, if not that this common idea is due to an unknown cause—perhaps to some physical influence—and that, in order to justify its emergence, it has called forth a series of antecedents which explain it and which seem to be its cause, but are really its effect."[126] And "When a patient carries out at the appointed time the suggestion received in the hypnotic state, the act which he performs is brought about, according to him, by the preceding series of his conscious states. Yet these states are really effects and not causes: it was necessary that the act should take place; it was also necessary that the patient should explain it to himself; and it is the future act which determined, by a kind of attraction, the whole series of psychic states of which it is to be the natural consequence."[127] The associationalist's way of accounting for these phenomena is so familiar that we need not even discuss it. It is important, however, to see (1) that if Professor Bergson's account is the true one, we have here a wonderfully vivid argument for the transcendence by consciousness of the simple mechanical time series; and (2) that whether the account he gives is valid or not, Mr. Balsillie (in the article above referred to) is certainly right in seeing in the type of explanation offered a conclusive evidence that the author's pure duration is an explicit form of time-transcendence.

Apropos of the question whether an effect may precede its cause, there is another phenomenon that is even less susceptible to associational explanation than those mentioned in the foregoing paragraph. Dream life abounds in occurrences like the following: I am inflating a balloon and keep blowing it up larger and larger until finally it bursts with a loud report, and I find that I have been awakened by the bang of a door. Or again, I drive a hard bargain with the guide to escort me to the top of the Great Pyramid. Finally agreed, he leaps upon the first high step and

[126] *Time and Free Will*, p. 156.
[127] *Ibid.*, p. 157.

says "Come up!" and I find that I have really been called to "get up,"—that it is breakfast time, etc. The climax of the dream is obviously due to an outer cause, but the dream plot "works up to it" whereas the external cause was sudden and quite without discernible antecedents. Of course, it is possible to explain these cases too without resorting to the rather ulterior consideration of real time-transcendence (by saying, for instance, that the sleeper did detect the immediate antecedents of the disturbing incident and that the whole dream drama took place in a few instants of time, or, again, that it is an illusion of memory) but it seems to me that these dream events may at least serve as more probable illustrations of Professor Bergson's principle than the examples he himself gives.

Finally, it may be well to state once more the general position of this paper. The above detailed criticism has been only to a minor degree directed against the general conceptions of the great French philosopher. As a rule the writer finds himself in most enthusiastic agreement with them. Our objection has been chiefly to the terms used, not the ideas back of them. After giving some reasons for thinking that the facts of consciousness cannot be divested of all quantitative relationships, even those of greater and less, etc., and that a multiplicity that has *no* affiliation to number has yet to be demonstrated, we have tried to show (1) that quantitative time cannot be, or at least has not successfully been, identified with space; and (2) that the pure duration which is qualitative only, which has no relation to magnitude, which is not limited in its existence to the fleeting moment, but in which the past lives and the future is foreshadowed,—this pure duration which is the necessary presupposition of knowledge, of change, and of freedom, and is the ultimate "ens realissimum" of the inner conscious life, is essentially identical with the time-transcendence of the philosophies of the schools, and in particular with the "ewiges Geistesleben" that is the heart of Professor Eucken's philosophy. Although the two men here discussed start from quite different data, and follow different aims by altogether different methods, we are satisfied that, so far as the time problem is concerned, they reach nearly the same conclusions. And these fundamental similarities in spite of outward differences are, from a general standpoint, more important than the individual views of the two men, immensely interesting though the latter may be.

BIBLIOGRAPHY

Abbott, David P.
Thoughts on Time, Space, and Existence.
Aristotle.
Physics IV, 11, 14. *Metaphysics*, p. 309 ff. (M'Mahon Tr.).
Augustine.
Confessions, Ch. 14, 15, 16.
Balsillie, D.
Bergson on Time and Free Will, *Mind*, 1911.
Bache, R. M.
The Problem of Time, *Monist*, Vol. xvi, p. 304.
Bauch, Bruno.
Immanuel Kant, Ch. iii, part 2.
Bawden, H. H.
Principles of Pragmatism, pp. 271-274.
Benussi, V.
Zur-experimentellen Analyse der Zeitvergleichs, *Archiv für gesamte Psychologie*, Bd. xiii, Heft 1.
Bergson, Henri.
Time and Free Will; *Matter and Memory*; *Creative Evolution.*
Berkeley, George.
Principles of Human Knowledge, Par. 98.
Binet, A.
Note sur l'appreciation du temps, *Archives de Psychologie*, Tome ii, Fas. 1.
Bolliger, Adolph.
Die Willensfreiheit.
Boodin, J. E.
The Concept of Time, *Journal of Phil., Psy., and Sc. Methods*, Vol. ii, No. 14. *Time and Reality*, *Psy. Review*, Mon. 1904-1905. *Truth and Reality*, pp. 45-46, 246-247, 268, 280-285.
Bourdon, B.
La Perception du Temps, *Revue Phil. de la France et l'Etranger*, 32 Année, No. 5.
Bowne, B. P.
Theory of Thought and Knowledge, Sec. *Time*, *Metaphysics*, pp. 164-194.
Bradley, F. H.
Appearance and Reality, pp. 35-43, 205-222.
Brann, Dr. O.
Eucken's dramatische Lebensphilosophie, *Zeitschrift für Phil. und Phil. Kritik.*
Brown, H. C.
The Problem of the Infinite in Space and Time, *Jour. of Phil., Psy., and Sc. Methods*, Vol. vi, No. 19.
Calkins, Mary W.
Time as Related to Causality and Space, *Mind* for 1899.
Carr, H. W.
Mr. Bradley's Theory of Appearances, *Proceedings of the Aristotelian Society*, N. S. Vol. ii.
Charles, P.
La Philosophie de Rudolf Eucken, *Revue de Phil.*, 1909.

Coignet, C.
Kant et Bergson, Revue Crêtienne, July, 1904.
Constant, L.
Cours de M. Bergson sur l'histoire de l'idee de temps, Revue de Philosophie, January, 1904.
Descartes, Reno.
Oeuvres, Vol. iii, pp. 97-99. Letter to Vatier, November, 1643.
Eucken, Rudolf.
Art. *Philosophie der Geschichte* in *Kultur der Gegenwart*, Band *Systematische Philosophie. Problem of Human Life. Geistige Strömungen der Gegenwart. Hauptprobleme der Religionsphilosophie. Der Sinn und Wert des Lebens.*
Ewer, B. C.
The Time Paradox in Perception, Jour. of Phil., Psy., and Sc. Methods. Vol. vi, No. 6
Fullerton, G. S.
The Doctrine of Space and Time, Phil. Review, x, 5.
Gardiner, H. N.
Art. *Time*, in *Dictionary of Phil. and Psy.*
Goldstein, J.
Henri Bergson und der Zeitloskeitsphilosophie, Frankfurter Zeitung, May 2, 1909.
Guyau, M.
Genese de l'Idee de Temps.
Hegel, G. W. F.
Logic, pp. 195, 343 ff., 371 ff.
Herbart, G. F.
Werke, Band IV, pp. 93 ff., 127-132, 233, 240, 248 ff.
Hobbes, Thos.
Phil. Prim., pp. 57-58.
Hodgson, Shadworth.
Metaphysic of Experience, Vol. i, Ch. 3. *In what sense, if any, do past and future exist? Mind* for 1897. *Space and Time.*
Hume, David.
Treatise of Human Nature, pp. 26-68.
Isenkrahe, C. Th.
Der Begriffe der Zeit, Phil. Jahrbuch, xv, 1. *Der Begriffe der Zeit, Phil. Jahrbuch* xv, 3. *Über die Zeit, Phil. Jahrbuch*, xvi, 1.
James, Wm.
Principles of Psychology, Vol. i, Ch. xv. *A Pluralistic Universe*, p. 232 ff. *Some Problems of Philosophy.*
Kant, Im.
Critique of Pure Reason (Müller's Tr.), pp. 24-40, 82-90, 112-120, 136-172, 334-351.
Ladd, G. T.
Introduction to Philosophy, pp. 249-253. *Philosophy of Knowledge. Theory of Reality*, Ch. viii.
Lambert.
Neuen Organon.
Lechales, Georges.
Étude sur l'Espace et le Temps.

Leibnitz, G. W.
Philosophical Works of Leibnitz (Duncan Tr.), p. 244 ff. *Opus*, Ed. Erdmann. pp. 770, 776 ff
Leighton, J. A.
Time, Change, and Time-transcendence, Jour. of Phil., Psy., and Sc. Methods, Vol. v, No. 21.
Liebmann, Otto.
Zur Analysis der Wirklichkeit, pp. 87-112
Lotze, Hermann.
Microcosmos, Bk. I i, pp. 226-236; ii, Bk. II 708 ff. *Metaphysics*, Vol. ii, p. 240.
Lovejoy, A. O.
Place of the Time Problem in Modern Philosophy, Journal of Phil., Psy., and Sc. Methods, Vol. vii, 23. *The Obsolescence of the Eternal, Phil. Rev.*, xviii, 5.
McTaggert, Ellis.
Unreality of Time, Mind for 1908. *The Relation of Time and Eternity, Mind*, 1909.
Marshall, H. R.
The Time Quality, Mind, 1907.
Moisant, X.
La notion de multiplicité dans le philosophie de Henri Bergson, Revue de Philosophie June, 1902. *Dieu dans le philosophie de Henri Bergson, Revue de Philosophie*, 1905
Montague, W. P.
A Theory of Time Perception, Am. Journal of Psy. Vol. xv, No. 1.
Münsterberg, Hugo.
Grundzüge der Psychologie, pp. 320-330.
Myerson, Emile.
Identité et Realité.
Newton, Sir Isaac.
Principia, Ed. 1714, pp. 5, 7, etc.
Nichols, Herbert.
Psychology of Time
Ormond, A. T.
Concepts of Philosophy, pp. 516-532, 587 ff. *Foundations of Knowledge*, pp. 118-146.
Overstreet, H. A.
Change and the Changeless, Phil. Rev., xviii, 1. *Ground of the Time Illusion, Phil. Rev.*, xvii, 1.
Paulsen, Fr.
Introduction to Philosophy, Book ii, Ch. 1.
Pearson, Karl.
Grammar of Science, pp. 189, 212-215.
Plato.
Timaeus (Jowett's Tr.), Sec. 37-39. *Laws*, 676. *Parmenides*, II 141, 152 ff. *Phaedo*, I 107. *Republic*, x, 608.
Plutarch.
Phys. Decr. 1, 22
Prager, Hans.
Henri Bergson's Metaphysische Weltanschauung, Archiv für Systematische Phil., Bd. XVI, H. 3

Rawitz, Bernhardt.
Über Raum und Zeit, Archiv für Sys. Phil., xv. 2
Read, Carveth.
Metaphysics of Nature, pp. 178-179, 295-296.
Rogers, R. A. P.
Meaning of the Time Direction, Mind, N. S. xiv.
Royce, Josiah.
The World and the Individual, Vol. ii, Ch. iv. *Spirit of Modern Phil.*, pp. 152-6 250-3, 327-34, 358-9, 398, 412, 429-8, 477. *The Reality of the Temporal Int. Journal of Ethics*, Vol. xx, No. 3.
Russell, B.
Is Position in Time and Space Absolute or Relative?; *Mind*, 1902; *Philosophy of Leibnitz*, pp. 127-130.
Ruyssen, Th.
Art. *Temps, La Grande Encyclopedia*.
Schopenhauer, Arthur.
World as Will and as Idea Bk. i, 9, 44; ii, 121, 201-205; iii, 12 ff.
Schultz, F. E. O.
Erlauterungen zur Kantischen Kritik der Reinen Vernunft. Beitrag zur Psychologie des Zeitbewusstseins, Archiv für die Gesamte Psychologie, Bd. xiii, H. 4.
Seligman, R.
Kausalität, Archiv für Sys. Phil., Bd. XV, H. 2.
Sellers, R. W.
Critical Realism and the Time Problem, Journal of Phil., Psy., and Sc. Methods, Vol. v, Nos. 20 and 22.
Smith, Walter.
The Metaphysics of Time, Phil. Review, July, 1902
Solomon, J.
The Philosophy of Bergson, Mind, 1911.
Spencer, Herbert.
First Principles, pp. 49-52, 95 ff., 165-169
Spinoza, Baruch.
Cogitata Metaphysica, c. iv. *Ethics* (White and Sterling Tr.), pp. 2, 270-276.
Stout, G. F.
Manual of Psychology, p. 385 ff.
Taylor, A. E.
Metaphysics, pp. 241-264, 341-344.
Thury, M.
L'Appreciation du Temps, Archives de Psychologie, ii, 2
Von Bär, K. E.
Welche Auffassung der Lebenden Natur ist die Richtige?
Von Oliver, J.
Was ist Raum, Zeit, Bewegung, Masse?
Von Rechenberg-Linten, Paul.
Die Zeit, Archiv für Systematische Philosophie, Bd. XV, Heft 1.
Vierordt.
Der Zeitsinn (1868)

Ward, James.
Naturalism and Agnosticism, Vol. i, p. 68 ff.; Vol. ii, p. 146 ff., 170 ff. Art. *Psychology, Encyclopedia Britannica.*
Washburn, M. F.
Notes on Duration as an Attribute of Sensations, Psychological Review, Vol. x, No. 4.
Welby, V.
Time as Derivative, Mind, 1907. *Mr. McTaggert on "The Unreality of Time," Mind*, 1909.
Whately, A. R.
The Higher Immediacy, Mind, 1909.
Windelband, W.
Preface to *Matiere und Gedächtnis*; *Praeludien*, Ch. *Sub Specie Aeternitatis.*
Woodbridge, F. J. E.
The Problem of Time in Modern Philosophy. Journal of Phil., Psy. and Sc. Methods vii, 15.
Wundt, W.
Einführung in die Psychologie, pp. 16-24.

OCT 1929